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# THE PSYCHIATRIC QUARTERLY

EDITORIAL BOARD

Research and Teaching Activities of the Psychiatric  
Department During the Past Year

Acidophilus Milk Therapy

Clinical Work in the State Schools for Mental

The Blood-Cerebrospinal Fluid Barrier

Prevalence of Mental Diseases Among the Urban  
Populations of New York State

The Effect of Concurrent Somatic Disease on Mental  
Reactions

Long Habits in Mental Patients After Discharge

Treatment of Psychoneurosis in State Hospitals

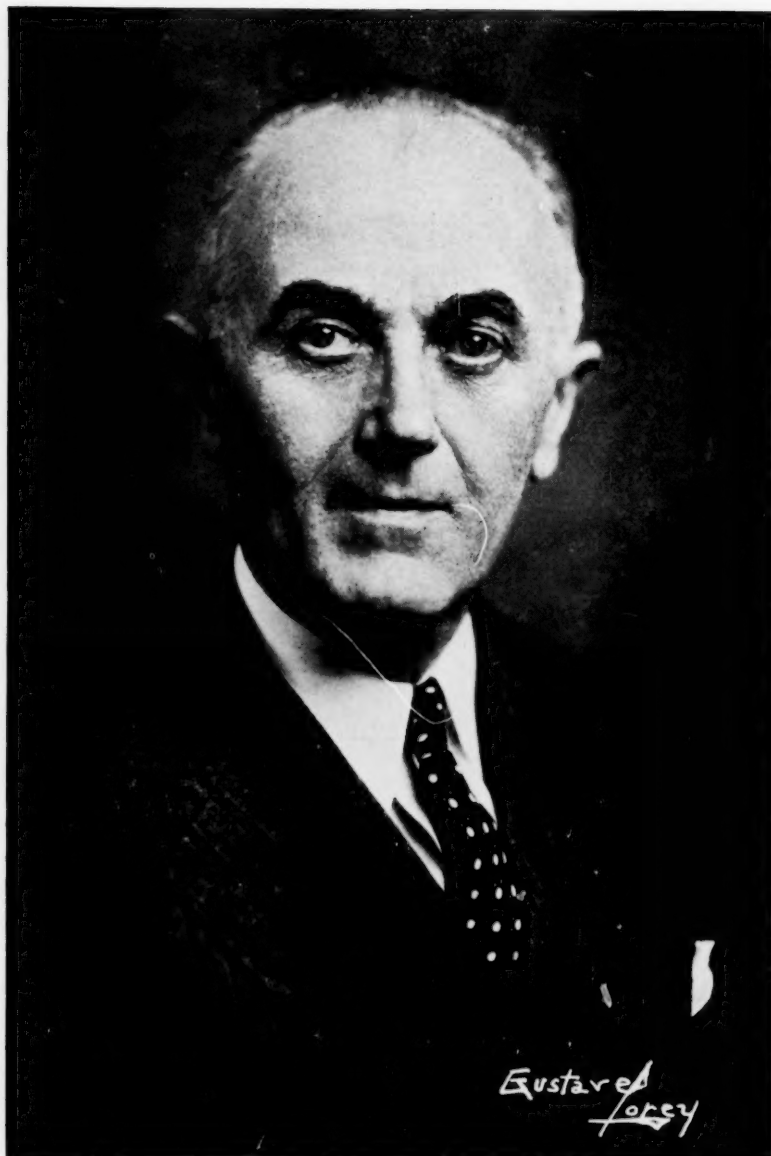
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Psychological and Environmental Factors in the  
Development of Freudian and Manic-Depressive

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FREDERICK W. PARSONS, M. D.





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# THE PSYCHIATRIC QUARTERLY

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## RESEARCH AND TEACHING ACTIVITIES OF THE PSYCHIATRIC INSTITUTE DURING THE PAST YEAR\*

BY CLARENCE O. CHENEY, M. D.,  
DIRECTOR, NEW YORK STATE PSYCHIATRIC INSTITUTE AND HOSPITAL

In attempting to present this brief review of the activities of the Institute during the past year, we may begin, as we have in previous accounts, with the out-patient clinic. In addition to the Institute staff, 20 physicians were giving their services in the clinic at one or more sessions a week. The assistance that these physicians give us in our work is reciprocated by the valuable training and experience that they acquire in the clinic, particularly through the clinic conferences which are held regularly. Three of these physicians had previously held appointments on the hospital staff and thus are continuing their training in the clinic. They have been given university teaching appointments as they take part in the undergraduate teaching. Special investigation of the effects of play technique in the treatment of children's problems, and of the psychoanalytic method in adolescent and young adults, as well as in the more mature adults, are being carried on in the clinic. Dr. MacKinnon, the chief of the clinic, has completed his study of hormone therapy in involutional disorders and the results are being prepared for publication. He has also been making an investigation of the various methods of psychotherapy used in the clinic so that a better understanding may be had of the various successful procedures in an effort to standardize and organize a more efficient, psychiatric approach to clinic cases.

Exclusive of patients admitted to the hospital, 771 patients were admitted to the out-patient department last year; 330 were carried for intensive treatment; 1,680 visits were made by physicians and 4,506 by patients, somewhat less, therefore than three patients to each doctor's clinic period. Such a proportion gives an opportunity for more satisfactory care and treatment than if the doctors were rushed with crowds of patients.

Students of the New York School for Social Work have continued to be assigned to us for their field training and case work. The

\*Read at the Quarterly Conference held December 15, 1934, at the New York Psychiatric Institute and Hospital.

supervisor financed by the school, continues on a full-time basis with us, working in the closest cooperation with our workers who themselves are gaining increasing experience by their own work and also by supervising one or two students in their course. This year our chief worker, the supervisor and at least one student worker have been included in each staff meeting held on each service weekly. Our social workers and the students, with the social workers of the Neurological Institute and the Vanderbilt Clinic frequently confer and attend the weekly hospital general clinical conference.

The past week has seen the completion of the ten weeks' post-graduate courses in neurology and psychiatry. Twenty-five physicians from the institutions in the Department and ten physicians from outside the Department attended the courses. One of these physicians was from Porto Rico, another from the state of Oregon and a third from Missouri. Much thought is given by us, in conjunction with the members of the Department of Neurology, to make this course as instructive and valuable as possible and modifications are being made in details from year to year to achieve this end. We hope that our efforts are reflected in stimulated interest by the Department physicians when they return to their respective institutions.

Training of our resident internes continues to be an important activity. Although the usual appointment period is for a year, from time to time one remains over for an additional six months or a year for further training, particularly in the work with children. Following their period with us, our internes have gone to other hospitals for training in neurology and psychiatry, several to hospitals in the Department. We are interested in keeping in touch with these men because of their progress in psychiatry.

By an arrangement completed last year, Columbia University has established the degree of Doctor of Medical Science for physicians who complete a three-year post-graduate training in hospitals or clinics approved by the university for such training in the various branches of medicine; psychiatry is one of these. The period includes one year of residence in the university. A special investigation on a selected topic with an acceptable thesis are required, in

addition to an examination, before recommendation for the degree is made. Our senior and junior residents have been accepted as candidates who have fulfilled the required period of training and are working on special individual investigations to fulfill the other requirements. It has also been ruled that the one-year resident internship here fulfills the university requirement of residence so that four physicians who have previously been with us as internes, and are now continuing their training elsewhere, have been accepted as candidates for the degree. This comparatively new development will emphasize the Institute as a university training center in psychiatry. We have under consideration plans for formulating the training in psychiatry and neurology for a period of not less than three years which will be required by the recently organized Board of Psychiatry and Neurology for certification and qualification for the practice of these specialties. Your director, as a member of that Board, is chairman of the committee to develop regulations for examination and certification. It is hoped that eventually one of the Foundations will make fellowship grants available to the Institute or to the Department of Psychiatry so that trainees may be financed during the required period without calling on the State for salaries which are not now available.

The second year medical and dental students have continued to have their course in psychopathology here, with the use of clinical hospital material. The third year clinical clerkship for a period of 10 weeks continues through the three trimesters so that throughout the school year we have 16 students on the wards and in the out-patient department under instruction and working on assigned cases. This activity demands much of the time and energy of the resident staff but the interest developed by the students and the benefits they receive is very gratifying and speaks well for an advance in psychiatric treatment in the community as these young men and women go out into practice. Because of the fact that the present fourth year class had for the first time last year been assigned work with children it was necessary this year to completely reorganize the fourth year lectures which previously had been devoted to children's problems. This new course has just been completed and further study of it will be given this year. Thus during



the first 10 weeks of the school year we have concurrently the post-graduate course, the third year trimester and the fourth year course, a situation that makes a fairly full program.

During the fiscal year ended June 30, 1934, 397 patients were admitted to the hospital for treatment; 369 of these were on a voluntary basis; 17 patients were admitted on a one physician's certificate and no patients were received on judicial commitment to the hospital; 11 patients were received from other institutions in the Department on transfer. Eighty-five of the patients counted among the admissions were children under 16 years of age. Three hundred and thirty-eight patients were discharged during the year; the total number of patients under treatment was 594. Admissions continue to be made up largely of dementia præcox, manic-depressive, psychoneurotic and general paretic groups.

On the clinical services various research activities have been carried on, in conjunction usually with the other departments of the Institute. Dr. Hinsie and Dr. Blalock have made a survey of the various forms of electrically produced fever in general paresis, in conjunction with the high frequency electrical treatment carried out by us in the past four years. The results of these studies have been published in the monograph *Electropyrexia in General Paralysis*. The fever treatment combined with the simultaneous administration of tryparsamide is being continued and results indicate a favorable outcome or remission in one-fourth to one-third of the cases, with improvement in an additional one-third.

We are appreciative of the cooperation given to us by the superintendents in the follow-up of those cases that have been sent to their hospitals following our treatment. The patients not hospitalized after leaving here are continued under treatment in the outpatient department. At the present time over 20 of these patients on parole are receiving weekly treatments in this latter department and approximately 50 paretics are being kept in touch with by visits to the clinic at stated intervals.

We have sensed for some time the importance of attempting to bring together the results of the various methods of treatment of general paresis that have been carried on in the State hospitals during the past 10 or more years. It has been felt that such a con-

solidation and comparison of results obtained in the very large number of paretics that have been treated, would enable us to arrive at more definite formulations regarding the most desirable and efficacious methods of treatment and the prognosis not only for immediate improvement or remission, but the ultimate outcome of treated cases. Because of this, therefore, we have suggested for the next interhospital conference which will be held in April of the coming year that a symposium be held on the treatment of general paresis, to be contributed to by all the hospitals which have carried out treatment. It would seem that the pooling of these results from the tremendous clinical material might offer an opportunity for contribution from the Department to medical knowledge that would be available in few other departments in this country. It is with much interest, therefore, that we look forward to these interhospital conferences and we are encouraged by the offers of contributions we have already received from some of the hospitals. We hope that all of them may be vitally interested in the possibilities of this study.

During the past year a survey was carried out by Dr. Horwitz and Dr. Kleiman of the clinical service, in cooperation with the social service department, of cases diagnosed as dementia præcox that had been discharged from the hospital over the three-year period, from January, 1930 to January, 1933. Such discharges numbered 193 and of these, 171 were traced; 124, or 72.5 per cent of these patients, required subsequent admission to a hospital; 47 had not been readmitted to hospitals. Of the latter group 14 were unimproved and 2 were dead. Twenty-two were improved or much improved and 9 were considered recovered. In this study an attempt was made to investigate various factors that may have played a part in the patient's improvement or lack of improvement. Among the factors considered were: intensive treatment, duration of hospital residence, age, physical constitution, family background, prepsychotic personality, and the amount of social service work done. These factors were not definitely different to a significant degree in the improved and unimproved groups, with the possible exception of the duration of the mental disorder before admission; that is, a higher percentage of those who had improved or recovered

showed a duration of less than one year before admission than in the rehospitalized group. Special concentration has been made more recently on the study of the 9 patients who were considered recovered. It appears that in these cases emotional reactions are outstanding, the onset was rather acute and the duration of the difficulty brief before admission. As a matter of fact, a review of these records by us now in at least several instances raises the question whether they were primarily emotional reactions or schizophrenic reactions. An effort is being made to select from the whole group patients who appear to have had closely similar acute onsets of emotional reactions but who did not recover but rather went on to deterioration. There is some evidence that there are such cases and the problem now is to determine what if any factors were operative in these two groups of cases that appeared to a certain degree, particularly in the onset and initial symptoms, as similar but whose outcome is different. Attempts are being made to evaluate the various procedures of treatment and the reactions of the patients to them.

It is perhaps unnecessary to say that thus far we are not in a position to state that there is any one cause of dementia præcox or that there is any specific cure. Obviously, to us, the reactions that we call dementia præcox, are not those of a disease entity with a specific pathology. Rather are they pathological reactions largely on the psychic level which certain individuals show in their life processes; some of these do not have the capacity, with or without help, to readjust themselves; others have such capacity, perhaps assisted by psychiatric treatment.

The study which was made by the Department of Psychology in collaboration with Dr. Katz on Mr. Z. who went without sleep for 236 hours, has been reported to the Section of Psychiatry and Neurology of the American Medical Association. In this experiment which was assumed entirely voluntarily by this young man who had the conviction that he could develop the habit of going without sleep, which was the longest period of sleep abstinence under controlled conditions which so far has been recorded in the literature, no marked alteration was found in any of the physiological or physical factors which were measured. Marked changes did take place

in the sphere of the total personality during the last two days of this experiment. Mr. Z. developed a rather well-formed delusional system which was maintained for several months after the experiment was over. However, one year after the conclusion of the experiment practically all traces of this system disappeared, and so far as we are able to determine he is in as good, if not better, health and psychological condition than at the period previous to his experiment.

Through the Department of Psychology, Dr. Frances Strakosch made a summarizing study of the histories of 700 women who had been patients at the Psychiatric Institute. She was particularly interested in the sex factors which are recorded in these histories as they might bear on the development of the abnormal personality. The bulk of the evidence indicates that sexual factors could not be demonstrated to be of primary etiological importance in the development of the abnormal personality. Although many of the patients were promiscuous before marriage, there was not sufficient evidence to indicate that promiscuity was of primary importance in the development of the abnormal personality. An excessively small number of patients was found who could in any way be classified as having had homosexual experiences or mental trends. The number of women who were maladjusted in marriage was higher among the patients than among normals. There was no way to see whether the maladjustment was due to the psychotic personality or whether the psychotic personality was due to marital maladjustment. In the light of these findings a grant was received from the National Research Council, Committee on Investigation of the Problem of Sex, for the intensive study of the psychosexual development of matched groups of 100 single women patients and 100 single normal women. This study will be made not from case records but by personal inquiry from each individual.

During the entire four years of the existence of the Department of Psychology, time and effort have been given to the use, validation and reconstruction of the questionnaire type of test which might be presumably of practical value in the everyday work in the psychiatric clinic. We have found that practically without exception every questionnaire at present on the market which purports

to measure neurotic personality is faulty. During the past year the department of psychology has made a statistical analysis of all the material obtained. As a result of this analysis it now has a list of questions which seems much more reliable and valid than those composing any other questionnaire which has previously been tested by this department. The department is still giving careful consideration to the results of this study and hopes during the coming year to test it again with a larger number of both normal and psychopathic individuals to see whether or not the test will be of practical value in the psychiatric clinic. This work has been greatly facilitated by the volunteer assistance of Dr. Joseph Zubin.

The department of psychology has continued a variety of studies and measurements of the psychological deteriorations and recovery with general parietic patients who have undergone treatment. The most outstanding finding to date is the fact that immediate memory and recall for names and digits seems to be practically uniformly identified with the psychiatric judgment of improvement or non-improvement at the time of discharge. One can say that "as goes improvement in immediate retention and recall, so goes general improvement." The department feels that the study of mental deterioration and recovery in the parietic offers a most fertile field to make use of the experimental psychological attack. If, in this disease, where we have a known physical entity and process, true psychological correlates can be drawn, then it seems possible that a similar experimental investigation could be made in the other varieties of psychopathological patients.

The metabolic and therapeutic studies in the myopathies were continued during the past year jointly by Dr. Harris of the Department of Internal Medicine and Dr. Brand of the Department of Chemistry. In cooperation with the Neurological Institute and particularly with Dr. E. G. Zabriskie, during the year 48 cases of muscular and neuromuscular diseases were investigated in respect to their creatine and creatinine metabolism and also in respect to the metabolic and therapeutic effects of glycine administration. Sixteen new cases of muscular dystrophy received glycine treatment while 15 cases continued under observation and treatment.

The question whether glycine administration has a therapeutic



effect in muscular dystrophy is still controversial. Since the progress of muscular dystrophy is particularly slow, it may as yet be too early to state definitely that glycine administration has no therapeutic value. On the other hand, however, we can certainly state that out of the large group of cases of muscular dystrophy receiving glycine for periods of a year and longer, none has shown any definite improvement.

Somewhat different is the situation apparently with respect to the value of glycine administration in cases of myasthenia gravis. In this disease, we have observed on two occasions that glycine administration, in addition to ephedrine treatment was apparently of considerable benefit to the patients.

It is intended to continue glycine administration to our selected group of patients for another year in order to possibly arrive at a conclusion in this controversial issue.

It is felt that this work of Dr. Brand and Dr. Harris on muscular dystrophies, begun some eight years ago, with their metabolic studies on these disorders, and with their suggestions of the importance of glycine in the metabolism, has been a source of stimulation to other workers in various parts of the country and that their work is recognized as a scientific contribution.

Aided in part by a grant from the Thomas W. Salmon Memorial Fund, the departments of chemistry and internal medicine and clinical psychiatry, have been intensively occupied with the study of a hormone excreted in the urine of women who have passed through the menopause, which has markedly stimulating effects on the follicles of the ovaries of rats. It was found that the more severe cases of involutional melancholia appeared to excrete larger amounts of hormone than those judged to be clinically less severe. This point will be investigated in more detail in the future. A few male patients appeared to excrete gonadal stimulating substances at approximately monthly intervals. This has suggested the possible presence of a monthly sexual cycle in the male. The extraction of the hormone from the urine is a time-consuming procedure. Its presence can thus far only be determined by the biological tests which require careful and exact breeding of rats. During the past year methods of extraction have been improved so that it is felt that

the department of chemistry is now ready to undertake the isolation and preparation of this hormone on a larger scale. The object is to find out the chemical nature of the hormone and to obtain concentrated and highly active preparations for therapeutic use. For the preparation of larger amounts of menopausal gonad stimulating hormones, we may need the cooperation of other State hospitals to obtain urine from menopausal cases.

The Department of Chemistry has been occupied also with studies of brain metabolism as shown by the consumption of oxygen by fresh brain tissues as determined with the aid of the Warburg-Barcroft apparatus. It has been established that brain metabolism is almost entirely carbohydrate metabolism and that glucose and lactic acid are the main fuels. This was confirmed by a series of studies on the effect of various amino acids on brain metabolism. By the use of this method of study of brain oxidation, the effect of various drugs and narcotics on the oxidative mechanisms of the brain was investigated by Quastel and his coworkers in Cardiff, Wales, whose laboratory has been visited by your director and Dr. Brand. Quastel put forward the hypothesis that anesthesia and narcosis consist in the specific depression of the oxidation of glucose and of lactic acid and similar substances in specific centers of the nervous system. We can confirm Quastel's observation with respect to the action of the drugs in the concentration used by him. However, Quastel used only one rather high concentration of drug in his experiments. We found it, therefore, necessary to extend the studies of a fairly wide range of lower drug concentrations.

The inhibition of glucose and lactic acid oxidation of brain tissue by veronal even in high concentration is so slight that with low concentrations of this narcotic, no effect was obtained. However, with luminal and particularly with sodium amytal, there was, with properly selected low concentrations, a stimulation of certain oxidative processes due to lactose and glucose oxidation. On the other hand, with high concentration of these drugs, a stimulation of the oxygen uptake due to succinic acid was observed.

We believe, therefore, that our findings with the low concentrations may have as much physiological significance as Quastel's findings with the high concentration. In partly modifying a view of



Holmes, we may give our present opinion in this matter as follows: if narcotics act by depressing or stimulating oxidations at certain specific localized points in the brain, it is obvious that the relatively crude experiments which are at present possible may not necessarily throw any light on the question. -

Part of these studies were presented before the American Society of Biological Chemists at the New York meeting of the Federation of American Societies for Experimental Biology.

Dr. Brand has also carried out special studies of sulfur metabolism with particular reference to the sulfur-containing amino acid cystine. These studies have been carried out in cooperation with Dr. George Cahill, associate professor in urology, Columbia University, and were aided by several grants from the Committee on Scientific Research of the American Medical Association.

"Heavy water" or deuterium oxide, contains the heavy isotope of hydrogen in its molecule and was recently discovered by Dr. H. C. Urey, professor of chemistry, Columbia University, who received the Nobel Prize for this discovery. It is said to be poisonous to animals and to bacteria in high concentrations. The Department of Chemistry carried out some experiments on the effect of this "heavy water" on brain metabolism. Concentrations of as much as four per cent of "heavy water" did not seem to influence the oxidation of glucose and of succinic acid by hashed brain tissue in the Warburg-Barcroft apparatus. Tests with higher concentrations have, as yet, not been undertaken due to the prohibitive cost of highly concentrated "heavy water."

The Department of Medicine has in addition, been carrying out a number of special investigations on the clinical services. One of these pertains to the metabolic changes in connection with the cyclic disturbance in a girl, associated with the menstrual cycle. A strikingly low metabolic rate was found in her case in connection with her attack; the administration of large doses of thyroid altered the menstrual flow and was associated with a marked clinical improvement. The discontinuation of thyroid treatment was followed by periodic attacks. We do not feel as yet, clear as to what mechanisms are involved but the effect of thyroid treatment is receiving further study in other cases.

Another study is being made regarding the diurnal variation in the day and night excretion of certain inorganic constituents under controlled dietary conditions. Marked differences have been found between the day and night excretion which, it is believed, may be connected with the activity of vegetative centers in the brain. It is planned to extend these studies to cases with stupor, with disturbed sleep mechanisms, etc., in the hope that they may give some insight regarding possible disturbances in the vegetative centers in these patients.

The Department of Bacteriology has been actively concerned during the past year with the study of the problem of tuberculous bacillemia and dementia praecox, the report of which study will be presented by Dr. Kopeloff at this meeting. Another topic that the department has been interested in is that of local cerebral anaphylaxis. With the cooperation of Dr. Leo M. Davidoff of the Neurological Institute, the department has already established that local cerebral anaphylaxis, as well as general anaphylaxis, may be produced in dogs when sensitized to either horse serum or egg white after it has been placed in contact with brain tissues by a suitable operative procedure. Controls fail to exhibit such local reactions. This work is still in progress.

Studies in connection with *Bacillus acidophilus* and acidophilus milk have been continued. The practical problem of the best temperature at which to store acidophilus milk has been studied and previous results have been amplified to indicate that refrigerator temperatures kill acidophilus organisms very rapidly and that therefore acidophilus milk should be stored either in a cool place or at room temperature.

The department has assisted the Council on Pharmacy and Chemistry of the American Medical Association in establishing criteria for commercial acidophilus products and has analyzed a number of those which have been accepted.

The Department of Neuropathology has continued intensive studies on neuropathological and neurophysiological topics, animal experimental methods being used extensively. In cooperation with Dr. Israel Wechsler of the Department of Neurology, the department is working on the histopathological changes in the central and

peripheral nervous system following experimental alcoholic intoxication. An attempt is being made to establish the importance which deficient nutrition and particularly certain forms of vitamin deficiencies may have in producing changes in the nervous system.

From the investigation of one case of circumscribed brain atrophy, with the analysis of all the facts contained in the literature, the conclusion has been reached that Pick's Disease should not be considered an heredo-degenerative condition but a condition due to vascular changes not unlike those found in some cases of arteriosclerosis. In addition a functional spastic condition of the blood vessels may be responsible for the determination of the gradual atrophy.

A report has been completed on 17 cases of tuberous sclerosis which is a form of mental deficiency associated with convulsive manifestations. The conclusion of the investigation is that tuberous sclerosis should not be considered as the expression of a developmental defect of the brain but as an expression of neoplastic tendencies of both nerve cells and glia cells. The neoplastic tendencies of these elements may in some cases lead to the growth of clinically recognizable brain tumors.

In a study in collaboration with Dr. J. Guttman of the department of otology of the New York Post-Graduate Medical School and Hospital concerning anatomical structures participating in the transformation of sound by the ear into electrical impulses, it was found that even with complete destruction of the middle ear, the eighth nerve and the ganglia within the cochlea, an electrical impulse was produced in the cochlea by sound impulses of the spoken word, and it was possible to amplify this electrical impulse and reproduce it as spoken words through a loud speaker, several floors below the floor on which the animal was being tested. This was a rather striking example of the role that certain parts of the body may play in transforming mechanical energy into electrical energy. The experiment suggests that the nerve cells of the organ of Corti may be looked upon as miniature microphones to transform sound into electrical energy.

I have attempted thus to point out some of the activities carried on in the Institute during the past year. They cannot, of course, be adequately discussed in such a brief presentation. More details are given in the annual report or in the individual publications of work done.

None of these activities could have been carried out, especially with the coordination that has been necessary, without the high degree of enthusiasm and interest and support that has been evidenced by my associates, for all of which I am indeed deeply grateful. It has also been very gratifying and encouraging to have, as we have had, the continued support of Commissioner Parsons in our activities which we have tried to keep within the bounds of reason and good judgment.

#### DISCUSSION

THE CHAIRMAN, DR. PARSONS: We have had presented to us a very interesting paper, thought provoking, one which indicates the controlled, well-directed scientific activity of the Institute. It is now before you for discussion. If you wish to ask any questions, Dr. Cheney will respond. In order to make a start, I ask for a further statement concerning Mr. Z.

DR. CHENEY: I felt you might be concerned about him. This boy who went without sleep for 236 hours was not compelled by us to do that. He was an eccentric boy who insisted upon doing it. He had an idea that if he went sufficiently long without sleep he could establish the habit of going without sleep and no further sleep would be necessary for him. We hesitated a long while before we consented to take any part in the rather fantastic idea but he was insistent that he wished to do so. I was concerned, of course, about what might happen if he did go without sleep. I can assure you that we got a signed release from him and from his father, indicating very carefully that he was undertaking this of his own accord so that we protected the hospital as far as we could of any damages that might occur. It was a very interesting experiment. The difficulty was, of course, to keep him from going to sleep. He was kept awake by being constantly with some one. He had friends who stayed with him and we provided our assistants to see that he was up all night during this 10-day period. In order to check the question as to whether he was asleep or not, we gave him a watchman's clock which he had to punch every 15 minutes; and that made a positive record that he was not asleep. He developed certain ideas during this period. He became irritable, thought people were working against him, particularly here in the hospital and it was because of those particular ideas that we gave definite directions that the proceeding should stop and he should not be continued awake any longer. He slept between 20 and 24 hours and after that sleep, seemed in as good physical condition as before. He seemed to be more stable than before the experiment. Immediately after he failed to establish this idea of going without sleep, he developed the idea that he could go without food indefinitely, so that the fact that he developed peculiar ideas during the period of sleeplessness does not

indicate the loss of sleep caused the changes but may have stimulated them. I would not have you think that we would wish to place a person under such an experiment against his will or without his distinct urging.

THE CHAIRMAN: I was quite sure that there were no third-degree methods used. I did not understand that the boy was here at the Institute.

DR. CHENEY: He stayed here; and he was studied physiologically, medically and psychologically.

DR. NOTKIN: I would like to inquire whether toxic substances were found in the excreta and in the other body fluids of the patient who was kept awake and if any animal experimentation was made with these substances with the aim to ascertain whether it would provoke sleep in the animal.

DR. CHENEY: That was not attempted.

MISS CRUTCHER: Was there any increase in the food intake during this period?

DR. CHENEY: The food intake was very slightly increased as in persons sitting up late at night.

DR. KATZ: I should like to add a few remarks regarding the question as to Mr. Z.'s improvement. Mr. Z. gained insight so that one year after the end of the experiment he was quite convinced that his attitude during the experiment had been unjustified. In an interview which we had with him about one year after the experiment, Mr. Z. seemed to us to be better integrated and had a saner attitude toward life. He got a great deal more satisfaction out of his social contact with his fellowmen and did not see the necessity of competing with them in resorting to unusual feats like going without sleep or food.

## ACIDOPHILUS MILK THERAPY

BY NICHOLAS KOPELOFF, PH. D.,

RESEARCH ASSOCIATE IN BACTERIOLOGY, PSYCHIATRIC INSTITUTE AND HOSPITAL, NEW YORK

The therapeutic value of acidophilus milk has been well established in chronic constipation, diarrhea and other functional intestinal complaints.<sup>1</sup> Individuals under treatment have usually gained weight so that acidophilus milk may be recommended for that purpose alone where indicated. The average gain per month varies from 2 to 5 pounds. Because of the acidity of the product, however, its use is contra-indicated in persons with gastric hyperacidity.

### PREPARATION OF PURE CULTURES

Acidophilus milk is best prepared from milk with a low fat content, therefore skimmed milk or whole milk from which some cream has been removed is satisfactory. It is important that the milk be fresh, for even slightly turned milk cannot be used.

Sterilize fresh milk in the autoclave at 20 lbs. pressure for 20 to 30 minutes or until it has become slightly caramelized. For stock cultures it is our practice to make transfers of about 5 c.c. of the original strain into several 300 c.c. Erlenmeyer flasks containing 100 c.c. of sterile milk. These are incubated for 36 to 48 hours at 35°C. The resulting soft curd should come away characteristically as a homogenous mass from the side of the flask when tilted. It should be tested for purity microscopically by Gram stain and by plating on casein digest or tomato juice agar. The stock cultures are then kept at *room temperature* until ready for use. They should not be held for longer than one month and freshly isolated fecal strains should be employed every two months.

Acidophilus milk for human consumption is prepared as follows: One, 2 or 3 liter Erlenmeyer flasks *half full* of sterile milk are inoculated with 3 per cent of stock culture and incubated for 36 to 48 hours at 35°C. One cannot be too careful in observing aseptic precautions during the inoculation process. It is insufficient to flame the neck of the Erlenmeyer flask; one should actually invert a Bunsen flame into the mouth of the flask before and after transfer. To prevent cotton adhering to the glass all cotton plugs are covered with cheesecloth.



Each day's supply of acidophilus milk may be used as an inoculum for the following batch. Such continued transfer, however, weakens the culture and tends to lower the count of viable organisms. Likewise the taste becomes less palatable. If the product deteriorates a new stock culture should be employed. In the routine preparation of acidophilus milk one may prepare a two-day supply. Care should be taken to avoid contamination of the remaining contents of the flask when individual portions are removed. Flasks should be held at room temperature and not in the ice-box as we have pointed out.<sup>2</sup> It is inadvisable to prepare more than a two-day supply as the count of viable organisms diminishes rapidly on storage even at room temperature. The number of viable *L. acidophilus* organisms should never be less than 200 million per c.c. as determined by plating on agar media. Counts should be made weekly or oftener as may be required according to the following procedure.

#### PLATING ACIDOPHILUS MILK

Shake the flask containing the acidophilus milk thoroughly and transfer 10 c.c. by means of sterile pipette to 90 c.c. of sterilized physiological saline. Shake 30 to 40 times by hand. Transfer 1 c.c. of this 1:10 dilution by sterile pipette to 99 c.c. of sterile saline. Shake as before. Transfer 1 c.c. of this 1:1000 dilution similarly to 99 c.c. Shake. Transfer 10 c.c. of this 1:100,000 to 90 c.c. of saline, making a dilution of 1:1,000,000. Shake. Transfer 1 c.c. each of the two highest dilutions to duplicate sterilized Petri dishes. Add 18 c.c. of agar at a temperature of 42°C. and rotate the plate gently to obtain an even distribution. After the agar has hardened, incubate the plates upside down for 3-4 days at 35°C. Typical fluffy, irregular, thin gray colonies appear resembling tiny bits of wool. The count should be from 200 to 400 million *L. acidophilus* per c.c. to obtain the best therapeutic results.

#### MEDIA

*L. acidophilus* grows poorly on ordinary media consequently it is advisable to employ special media such as casein digest or tomato juice agar as devised by Kulp and his associates.<sup>3,4</sup> The latter is



simpler to prepare and more economical than the former. The counts are not widely different with most strains. Incubation in an atmosphere of 10 per cent carbon dioxide gas aids in the growth of some strains.

#### A. TOMATO JUICE AGAR

Filtrate from canned tomatoes .....	400 c.c.
Distilled water .....	600 c.c.
Peptonized milk .....	10 gm.
Peptone .....	5 gm.
Agar .....	15 gm.

The canned tomatoes are filtered through one layer of cheesecloth then through three layers of cheesecloth and finally through coarse filter paper. The final filtrate should be clear yellow.

Dissolve the peptone and peptonized milk in the filtrate by heating *gently* in a water bath. Adjust the reaction to pH 7.1. Add the solution while hot to the dissolved agar. Check the pH. Filter through three layers of crossed absorbent cotton between two layers of cheesecloth. Place 300 c.c. amounts in 500 c.c. flasks and autoclave for 20 minutes at 20 lbs. pressure. The final pH should be 6.6. In the above outline we have deviated slightly from the original formula.

#### B. CASEIN DIGEST AGAR

Casein digest is prepared by dissolving at room temperature 300 gm. of casein ("washed from milk") in three liters of 1 per cent sodium carbonate in a four-liter flask. Shake gently while adding the casein slowly through a paper funnel. After the casein is thoroughly suspended add a paste of 4.5 gm. *fresh* trypsin (Fairchild) in 15 c.c. of distilled water. Add 37.5 c.c. chloroform, stopper lightly, and incubate for 48 hours at 37°C. The resultant is a straw colored digest which retains some precipitate representing undigested material. Add 10 per cent hydrochloric acid until neutral to litmus (210 to 300 c.c.). Heat in a water bath for 30 minutes to one hour to drive off the chloroform. Cool and filter through a Buchner funnel using 3 Whatman No. 5 filter papers, until perfectly clear. Autoclave for 20 minutes at 20 lbs. pressure. Store in a refrigerator and filter again before using.

To prepare casein digest agar dissolve 15 gm. of agar in 900 c.c. of distilled water by autoclaving for 20 minutes at 20 lbs. pressure. While still hot, place on a gas heater stirring occasionally to prevent scorching. Add:

- 100 c.c. filtered casein digest
- 3 gm. Liebig's meat extract
- 10 gm. lactose c. p.

Continue heating for 30 minutes or until all the ingredients are thoroughly dissolved. Adjust to pH 7.2. (Approximately 4 c.c. of normal sodium hydroxide per liter are required.) Heat to 98°C. and filter through two crossed layers of absorbent cotton placed between two layers of cheesecloth carefully fitted in a Buchner funnel. Run a little hot distilled water through the filter immediately before using. Autoclave the agar for 20 minutes at 20 lbs. pressure. The final pH should be 6.9 to 7.0.

#### GRAM STAIN

The chief difficulty in ordinary Gram-staining of *L. acidophilus* in milk or fecal specimens is that the débris is Gram-positive, thereby obscuring the desired organism. We have developed a modification of the Gram stain which yields a clearer picture, leaves the débris Gram-negative, is of excellent keeping quality, and offers little danger of overstaining.<sup>5</sup> A further modification of this method has been widely used.<sup>6</sup> It is as follows:

Air-dry film and fix with least amount of heat necessary.

Flood with dye for 5 minutes. Previously mix 30 drops of a 1 per cent *aqueous* solution of crystal violet or methyl violet 6B with 8 drops of a 5 per cent solution of sodium bicarbonate. Allow the mixture to remain for 5 minutes or more.

Flush with iodine solution for 2 minutes. Two grams iodine dissolved in 10 c.c. normal sodium hydroxide solution and 90 c.c. water added.

Drain without blotting but do not allow film to dry.

Add a mixture of equal parts of acetone and alcohol drop by drop until the drippings are colorless. (10 seconds or less.)

Air-dry slide.

Counterstain for 20 seconds with 0.1 per cent aqueous solution of basic fuchsin.

Wash off excess stain by short exposure to tap water and air-dry. If slide is not clear immersion in xylol is recommended.

#### PALATABILITY

The palatability of acidophilus milk is determined chiefly by its purity and reaction. Obviously, palatability is a matter of individual taste and therefore it is impossible to follow any rule of thumb in preparing a product that will appeal to a large number of persons. Until uniformity is achieved it is necessary to taste acidophilus milk before dispensing it.

Ordinarily speaking, the reaction of the product is an excellent criterion. Up to a certain point the more acid the reaction the greater the number of viable organisms. Our practice is to titrate in duplicate 1 c.c. samples against N/20 NaOH using phenolphthalein as an indicator. With our strain of *L. acidophilus* 2 c.c. of N/20 NaOH per c.c. indicates a palatable product of adequate viability.

#### LARGE SCALE PRODUCTION

For large scale production vertical pasteurizing tanks, as suggested by Bass,<sup>7</sup> may be used. It is believed that a large steam cooker fitted with a cold water coil could be similarly employed. This milk is raised to a temperature of 190° to 195°F. and held at this temperature for three to four hours. The temperature is again raised to 190° to 195°F. for one hour. After cooling to 98°F. the milk is inoculated with 3 per cent of pure *L. acidophilus* milk culture. It is held at 98°F. for 36 hours. The coagulated milk is then broken up by a sterile mechanical agitator or paddle. It is cooled to room temperature and distributed immediately.

#### DOSAGE

To obtain the best results acidophilus milk should be administered in 500 c.c. amounts for the first 3 or 4 days and thereafter in 1,000 c.c. amounts daily. Not infrequently during the first few days of treatment the production of gas by other microbes in the

gastrointestinal tract may cause slight discomfort or distention which usually subsides by the fourth day.

In cases of obstinate chronic constipation or severe diarrhea it may be necessary to increase the dosage after the fourth day to 1,500 c.c. daily. Furthermore, in such cases it is advisable to administer acidophilus milk rectally as well as orally. Our practice in such instances is to first give a warm cleansing enema to evacuate the lower bowel and then to instill from 200 to 500 c.c. of acidophilus milk thinned with enough warm (not hot) water to cause it to flow freely through the tube. This should be in the nature of a high colonic irrigation and should be retained for as long a time as possible. Cathartics and purgatives should be avoided during acidophilus milk treatment but glycerine suppositories and enemas may be employed when required. Medication which may have a bactericidal action in the gastrointestinal tract, as for example, bismuth subnitrate, should be omitted.

Acidophilus milk may be taken in doses divided on the basis of individual preference. Midway between meals and before retiring at night are appropriate times since these make for the least possible interference with the appetite. No modification of the diet is necessary but the reduction of animal protein intake to a minimum is most desirable.

As benefits from treatment are noted the individual should experiment with himself in reducing the dosage. At such a time lactose may prove a valuable adjunct in making permanent the advantages derived from treatment. From 50 to 100 gm. of lactose U. S. P. suspended in the acidophilus milk, or any other beverage if desired, should prove beneficial for this purpose. In our experience lactose in ordinary amounts cannot replace acidophilus milk in transforming the intestinal flora and there seems to be no particular advantage in administering it in the early stages of acidophilus milk treatment.<sup>8</sup>

In order to arrive at a satisfactory evaluation of acidophilus milk therapy it is advisable to keep a careful daily record of individuals before, during and after treatment. The amount of acidophilus milk and lactose should be recorded as well as the number, size, color and consistency of bowel movements. Any other measures

employed for regulating the gastrointestinal tract should likewise be noted.

In general it may be said that the benefits of acidophilus milk treatment persist for approximately as long afterward as the treatment was employed. A gradual return to the original status may be expected but if the treatment has been carried out conscientiously for six months or more, a long period of time will elapse before the acquired benefits disappear. Acidophilus milk treatment operates in a manner contrary to the use of drugs, i. e., the longer the period of treatment, the smaller the dosage required to achieve maximum results.

#### SUMMARY

1. Methods for the preparation of pure cultures of acidophilus milk are described together with directions for the preparation of appropriate media, plating, staining, etc.

2. The administration of acidophilus milk with particular reference to palatability, dosage and persistence of benefits is discussed in detail.

#### ACKNOWLEDGMENT

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## CLINICAL WORK IN THE STATE SCHOOLS FOR MENTAL DEFECTIVES

BY HOWARD W. POTTER, M. D.

During the month of February, 1933, a study was made of the clinical work in the New York State institutions for mental defectives. Acknowledgment is made of the sincere cooperation of the superintendents and other staff members and officers of each institution. Needless to say, without their cooperation a study such as this would not have been possible.

The study consisted of a survey of the case study, medical, surgical, educational and social therapy, the case record system, and the personnel and equipment provided for carrying out these activities.

### A. THE CASE STUDY

The case study ordinarily consists of the anamnesis, physical examination, laboratory examination, mental examination, and observations while under care and treatment (progress notes).

1. *The Anamnesis.* In each institution an anamnesis was on file in the case record on practically all patients who had been admitted three months prior to the visit. In some records of the more recently admitted patients no anamnesis was on file. The methods of securing anamneses vary in the different institutions. In two institutions anamneses are secured by the social worker through a visit to the home, interviewing relatives and others at the institution or at an office in a large city to which parents and others come for the interview. In two institutions anamneses are secured largely through local social agencies before patients are accepted for admission. In one institution no effort is made to obtain a complete anamnesis and reliance is placed on an abstract of the data recorded in the commitment paper. The adequacy of the anamnesis varies in different institutions. In those where the history is secured directly by the social worker, there is a definite trend toward a careful study of the life experiences and environmental factors as well as a study of the medical, scholastic and social factors in the per-



sonal and family history. Many of the histories sent in by community agencies are very complete and others are sketchy and inadequate. This depends of course on the calibre of the work of the respective agencies.

II. *The Physical Examination.* Physical examinations are made in all institutions not later than one week after the admission of the patient. Three different forms for recording physical findings are used by the five institutions. In certain individual instances it appeared that the physical examination was possibly somewhat perfunctory. On the whole, however, the physical examinations are reasonably complete.

III. *Laboratory Examination.* In all institutions a blood Wassermann test is part of the routine. Four of the institutions send the blood specimens to the laboratory of the State Board of Health, and one to the laboratory of the health department of the city in which the institution is located. These laboratories report the results of the Wassermann test to the respective institutions.

In one institution a urinalysis is made on each newly-admitted patient.

In all institutions simple clinical laboratory tests are done, when indicated, and one institution carries out, when indicated, more complicated procedures such as blood chemistry determinations and basal metabolism tests.

Autopsies are a planned part of the clinical study in two of the institutions. In one of these the policy of securing autopsies whenever possible had just been initiated shortly before the visit and in the other post-mortem studies have been carried on for a period of several years. In the latter, considerable study has been devoted to the autopsy material in the laboratory at the institution.

IV. *Mental Examination.* In three institutions the mental examination consists exclusively of a psychometric study. The psychometric study in the various institutions varies considerably in its adequacy. In one institution it consists of a complete survey of the quantitative and qualitative nature of the intelligence, verbal, non-verbal and educational tests being used. In another institution the routine is to administer a Terman test on all admissions and



other tests are used only when the patient has some special defect such as deafness. The Stanford Revision of the Binet-Simon test is used as a standard in all institutions in calculating the mental age and intelligence quotient for classification purposes.

The psychologist in three of the institutions writes a fairly detailed report of the psychometric study. This report analyzes the patient's responses to various types of tests, the attitude of the patient during the test, and sometimes includes interpretations of the tests in terms of practical everyday training and education.

In three of the institutions, children of school age, mentally and physically, are retested once every year or once every two years and in one institution all patients in colonies are retested annually and it is a practice in some of the institutions to test each patient before being paroled.

In two of the institutions all newly-admitted patients of school age, mentally and chronologically, are given an educational test which is based on the Syllabus of the New York State Department of Education. The same educational test is used as a basis for determining the scholastic achievement of the children as they go through the school department.

A mental examination other than that covered by psychometric tests is made in only two institutions. This examination follows essentially the outline described in the Kirby Guide.

V. *Observations While Under Care and Treatment (Progress Notes)*. Here again considerable variation is found. In one institution a note is made by the physician on each patient every three months. In another institution notes are made semi-annually on all patients by a physician and at more frequent intervals when the condition of the patient so indicates. In another institution a descriptive note of the patient's behavior and reactions during the first week after admission is made, a second note is made six months after admission, and thereafter notes are made annually. There is a tendency for the notes to become stereotyped and repetitious. In one institution it did not appear that any notes were made by the physician but when events of some importance transpire a note is made by an attendant and this is filed in the case record.

VI. *Summary.* In four of the institutions the case history is summarized after the patient has been in the institution for a reasonable period of time. These summaries are especially complete in two of the institutions.

B. MEDICAL, SURGICAL, EDUCATIONAL AND SOCIAL TREATMENT

I. *Medical and Surgical Treatment.* In all institutions patients are immunized practically immediately after admission against smallpox, diphtheria, and typhoid.

In each of the institutions a separate unit is set apart for the treatment of acute medical and surgical conditions. In one of the institutions a separate hospital building is provided. Special hospital records similar to those used in any well-organized general hospital are kept on all patients undergoing medical or surgical treatment. In all institutions anti-syphilitic treatment is carried out for patients who have systemic syphilis or syphilis of the central nervous system. In none of the institutions, at the time of the visit, was tryparsamide employed for the treatment of central nervous system syphilis.

II. *Educational Treatment.* As might be expected the educational treatment comprises the major part of the work of each of the institutions. For purposes of discussion, educational treatment can be divided into academic training, manual training and industrial arts, and industrial training. The academic training varies in the different institutions. In four of the institutions the academic training ranges from pre-kindergarten work through the fourth or fifth grade. In all institutions it is a policy to have all children of school age above the idiot group attending some sort of academic or pre-kindergarten class. In three institutions it is a general policy not to keep children in academic work after they have reached the age of 16. In one of these institutions the classes in the academic work are mixed, that is, boys and girls attend the same class at the same time. In one of the institutions, academic training is carried on for a selected group of boys and girls up through the ninth grade. In another institution the activities of the school department are divided into habit-training classes for the idiot and

lower grade imbecile group, academic class work in the institution for all children under 14 years of age with I. Q.'s of 50 or over, and academic work in colonies, known as junior colonies, where children not older than 14 years are colonized.

It is a general plan in all institutions for children of school age to spend half the day in academic work and the other half in manual training and industrial arts. As a part of the academic training, all institutions have well-trained music and gymnasium instructors and all of the children attending school spend an appreciable amount of time under the guidance of these instructors. In one of the institutions the music teacher and physical education instructor visit all wards daily for short periods of singing, marching and setting-up exercises.

The progress that the children make in their academic work is checked by the standards set by the New York State Board of Education, although in one institution the Stanford Achievement Test is used for this purpose.

Careful records are kept of each child's academic work and behavior reactions in the classroom and these become a part of the permanent case record.

In some of the institutions the academic work and the manual training and industrial arts are under the direction of a head teacher. In others it is a policy to have one person be responsible for or head up the academic work and another person head up the manual training and industrial arts work.

Manual training and industrial arts work is well organized in all institutions. There is a large variety of arts and crafts included in this work. They are too numerous to be described. Attention should be called to the fact that the manual training and industrial arts classes are not confined exclusively to those children of school age. Many children who are too low grade to profit by any kind of academic training and who are not employed at some work about the institution, attend classes specially organized for them. All of the institutions have modified domestic science courses for the girls. In three of the institutions, in addition to classes in preparing and cooking food under a trained dietetics teacher, there is organized instruction as a part of the school set-up in household laundry

work, dining room service, sewing and mending and other forms of household work. In one of the institutions a course in practical nursing is given to older higher grade girls under the direction of the head nurse.

After the patients have become old enough to leave the school and industrial arts classes, their training is continued along what might be termed industrial lines. Naturally a good many of these patients are obviously in need of continued institutional care and comprise a group who are eventually placed in some particular work about the institution where they seem to fit in best. Others, those who are likely to leave the institution, are given opportunities to work in various departments of the institution; the girls in the kitchens, cannery, laundry, dining rooms, attendants' homes, staff quarters and private residences, and the boys are largely absorbed by the out-of-door work in connection with the farm and gardens, dairies, horse stables, piggeries, henneries, etc. A few are also assigned to the various mechanical departments. In those institutions having colonies much of the industrial training is carried out or continued there.

III. *Social Therapy.* Naturally a large part of the social therapy is hidden in the everyday activities of school, work, and play in the institutions. Children thus not only develop habits of industry and compliance but have the opportunity for social relationships with other children, physicians, teachers and ward personnel. It is therefore obvious that the institutions are dependent upon the calibre of their officers and particularly the employees who are in contact with the children 24 hours a day for the success of a good deal of the character building work with the children.

Planned diversional activities such as parties, dances, movies, picnics, bazars, exhibitions, plays, field days, etc., are an important part of the social treatment and are well organized in all of the institutions.

In any institution for mental defectives the supervision and guidance of patients who do not reside in the parent institution is an important part of the social treatment. There are three classes of patients for whom the social service department takes an active responsibility: those on visit, those on parole, and those in colonies.

In two of the institutions patients who are at home for a definite period of time with the expectation of returning to the institution at the termination of this period, are not carried on the records as on parole. This period may amount to as much as three months in some instances. In the other three institutions any patients who are away from the institution for a period of longer than two or three days are recorded in the census as on parole. Attention is called to this difference in policy because the annual statistics of the various institutions regarding paroles are not comparable.

In one of the institutions practically all of the patients are paroled to working homes. It is not the policy of this institution to parole patients to their own homes except when the home is especially good. Patients are paroled either directly from the institution or from colonies. In practically all instances patients are paroled for an indefinite period of time. However, in one institution those who are paroled to their own homes are rarely kept on parole for more than a year.

In all institutions when patients are paroled to working homes they are not only visited at regular intervals by the social worker, but a monthly report is required to be sent in by the person to whom the patient is paroled. This report comments on the behavior and work efficiency of the patient and also gives a detailed account of the finances. All patients on parole to working homes are paid a nominal salary which varies to some extent in the different institutions. Generally speaking, the salary ranges from \$10 to \$20 a month. The unexpended balance of the salary remaining after deductions for spending money given to the patient, money spent for clothing and other legitimate expenses, is remitted to the institution and the accounts of each individual patient on parole are kept in the steward's office. The money is deposited in a trust fund in a saving bank. When a patient is discharged from parole the account is usually closed and the money turned over to the patient. Girls are usually paroled as domestics and boys as farm laborers. Three of the institutions have colonies. Patients are selected for colony placement from the medium and high grade group who appear likely to be able to make an adjustment outside of the institution. It is to be noted, however, that there are instances in which



patients have made a very poor adjustment in institutional life and have shown considerable improvement in their behavior and reactions when placed in a colony. In two of the institutions it is the general policy that patients shall have spent a period of from one to two years in the institution before colony placement and that during this period they shall have had an opportunity to get as much as possible from the school department. In another institution, patients who are above school age or just about reaching the school age limit on admission to the institution are not placed in colonies until they have had the modified domestic science instruction given in the institution. In this institution patients are often colonized within six months or a year after admission. The general plan of colony life is too well known to go into any detail. Patients live in the colonies and in the girls' colonies the patient first works in the colony house and later goes out by the day to work as a domestic in private families in the town, coming back to the colony at night. Before the depression one institution had industrial colonies for girls in which the girls worked in a nearby mill under the direction of a specially selected foreman. The boys' colonies are exclusively farm colonies. In rush seasons they are often called upon by nearby farmers to help out with the work.

An interesting development in one institution is what are called junior colonies. These are organized, some for boys and some for girls. Younger medium to high grade children make up the population of these colonies. A school teacher spends a half day, 5 days a week, at each colony and the children live a much less institutionalized life.

In another institution there are two interesting experiments being carried on in community care. One is an experiment in boarding home placement for young children of the moron level. The idea is to avoid institutionalization especially in those who seem to be capable of making an adjustment in the community if given only a reasonable opportunity and a favorable environment. Children placed in these boarding homes attend the public school, the local Sunday school and church and the boy and girl scout troops. They live essentially the same kind of a life as they would have lived in their own homes if their own homes had been suitable for them.

The other development is an experimental attempt to colonize mental defectives on a plan similar to that at Gheel. A one-street country village, some 15 miles distant from the institution and remote from a main traveled highway, has been selected. The village consists largely of simple living, retired farmers and has the facilities of the usual small up-State village such as a general store, a local church, etc. The total population is probably not over 250. To selected homes in this village have been sent older women of the higher grade imbecile level and thus far they have made an excellent adjustment in the community. The institution pays board for these patients as well as for the children who are boarded out.

None of the institutions have training courses for attendants.

Staff meetings are held regularly in all institutions. The persons who attend these meetings at the different institutions varies somewhat. In one institution the entire medical, social service and teaching staff attend the meetings. In the other institution the group usually consists of the medical staff, the head teachers, the social workers and the general matron. In all institutions the superintendent attends staff meetings regularly. There are two staff meetings a week, one for the presentation of new patients or patients who present some particular problem, and the other for patients who are to be considered for parole or discharge. In only one institution does it appear that all newly-admitted patients are presented at staff conference. At this institution, however, the cases are presented very briefly and nine cases were presented during the course of an hour and a half session. In the other four institutions cases are presented much more in detail and during the course of an hour it is seldom possible to cover more than one case. The writer attended staff meetings in each of the institutions and in four the cases were presented in an interesting manner and well discussed.

A medical library is an important adjunct to every institution. In two of the institutions there was a well-equipped medical library consisting of a good selection of reference books, bound periodicals, and a well-chosen subscription list for current periodicals. In none of the institutions however was the library housed in a room which was used solely or largely for this purpose.



## C. PERSONNEL AND EQUIPMENT

I. *Medical Offices.* In only one institution were the medical offices located on the clinical services. No special diagnostic equipment was supplied to these offices, however, and each office contained a variable supply of drugs and ointments which the physician dispensed to the different wards or dormitories. These offices were equipped with filing cases for case records, in which were filed a summary of the commitment paper, a copy of the anamnesis, a copy of the psychologist's report, an abstract of the physical examination, progress notes, and a copy of the correspondence for all patients located on the service. Stenographic service is provided for dictating progress notes and correspondence. In the other four institutions the medical offices are located in the administration center. However, in these the administration center is adjacent to the clinical services and although the case records are not filed in the medical offices, the central record room is adjacent to the offices. Inasmuch as the examination of patients are carried out elsewhere than in the medical offices, no diagnostic equipment was provided. Stenographic service is available as needed.

II. *Medical Personnel.* The number of patients to each physician, including patients in colonies and excluding the superintendent, ranged from 309 in one institution to 440 in another institution. Inasmuch as the higher grade patients require more of the physicians' time, an estimate was made of the number of patients above the imbecile level to each physician and it was found that this number ranged from 150 in one institution to 300 in another institution. The number of newly-admitted patients to each physician ranged from 45 in one institution to 257 in another institution. It should be noted, however, that the latter figure is explained by the fact that the majority of the admissions were comprised of transfers from other institutions. The number of admissions above the imbecile grade to each physician ranged from 34 in one institution to 85 in another institution.

III. *Laboratory and X-ray Equipment.* Three of the institutions have sufficient laboratory equipment to carry out simple clinical laboratory tests such as urinalyses and blood counts. These

institutions do not have laboratory technicians. Two of the institutions have well-equipped laboratories sufficient for carrying out neuropathological work and a variety of laboratory studies.

One of the institutions has no X-ray equipment of any sort and depends on a local hospital for this work. Two of the institutions have well-equipped X-ray departments and the other two depend on a dental X-ray equipment to meet their ordinary X-ray requirements. The X-ray work is done by a technical assistant in only one of the institutions. In the others, one of the physicians is assigned to this work. Only one of the institutions had provisions in the budget for a laboratory technician.

IV. *Psychological Work.* Provisions for psychological work vary considerably in the different institutions. One institution has two rooms set apart for psychological testing and also provides an office for the psychologist. The psychological laboratory in this institution is unusually well-equipped and has available about 70 different types of psychological tests. This institution has provisions for a psychologist in its budget. In three of the institutions no psychologist is provided for in the budget and the institutions have to depend on persons with a variable amount of training who stay for relatively brief periods and come to the institution mainly for the experience. In two of the institutions no special place or room is set aside as a psychological laboratory. In these institutions the psychologist usually transports the test material from ward to ward or building to building.

V. *School.* In all of the institutions the school department, consisting of the academic division and the manual training and industrial arts division, appear to be reasonably well staffed. Each institution provides not only teachers for academic work and trained persons such as occupational therapists and others for the manual training and industrial arts classes, but also has on its teaching staff teachers who devote their full time to instruction in music, physical training and domestic science. At one institution the school department is handicapped because of the lack of any special provision for academic classes. It is necessary to hold a good many of the classes in a curtained-off corner of the day room.

VI. *Social Service.* In all of the institutions an office and secretarial service is provided for social workers. The number of persons assigned to the social service department varies from two in one institution to four in another. It is expected that a careful study of the social service departments of the various institutions would show the need for more workers in each of the institutions. It is likely that with more better trained workers on the staffs of the different institutions that the number of patients who could be cared for outside of the institution would be materially increased.

#### D. CASE RECORD SYSTEM

In each institution there is a case-record system. The case material is filed in open and manila folders according to the case number assigned on admission. The material included in each case record depends of course on what records are kept in the respective institution. That there is no uniformity in this material, except in a general way, is obvious. In a general way, however, the case records in each institution are comprised of the statistical data sheet, the commitment paper, the anamnesis, the physical examination, laboratory reports, reports of the mental examination, school notes, hospital records, progress notes and parole notes. In some of the institutions the school record and parole notes are not included in the main case record until the case is closed in those respective departments.

#### E. CONCLUSIONS AND RECOMMENDATIONS

To summarize we may say that there is already in operation in the various institutions for mental defectives in this State a clinical study of the patient comprising a family and personal history, a physical examination, some laboratory studies, a mental examination, and a record of the patient's course in the institution. The adequacy of the case study in respect to its various subdivisions varies in the different institutions as well as the equipment and personnel for carrying on the work. These institutions, although under medical direction, have been and still are primarily educational organizations. There has been a definite tendency for other angles of approach to assume a

secondary place. However, as our knowledge of the clinical aspects of the problem of mental deficiency has accumulated, it should be clear that although the ultimate aim still is education, nevertheless this aim may be expected to be advanced by the more intensive infiltration of the work of the institution and the study of the individual patient by the psychiatric approach. The psychiatric approach includes the consideration of the soma, the psyche (emotions and intelligence), and the environment. It is recommended therefore that uniform case study standards be adopted by the State schools. The following standards are offered for consideration.

I. *The Anamnesis.* The anamnesis should contain information about the patient as to family, birth, infancy, development, school progress, personality, behavior and environment. The section on the examination of children in the "Outlines for Psychiatric Examinations", edited by Cheney, and published by the New York State Department of Mental Hygiene, discusses the anamnesis in its special relation to children and is applicable to mental defectives. The outline for the anamnesis in this manual should be followed when the anamnesis is secured by a representative of the institution.

Two general policies regarding how the history is to be secured seem practical. One of these is the requirement that local agencies send in a history prior to the admission of the patient to the institution and it is a function of the institution to educate these respective local agencies when necessary to the requirements of a satisfactory history by sending them detailed instructions or a copy of the guide for history taking. This procedure would be applicable in those instances in which the patient comes from remote districts of the State. The second policy, applicable when the patients come from nearby communities, would entail securing the history by a social worker from the institution through a personal visit to the home or an interview with relatives and other informants at a central point in the community or at the institution on visiting days. The physician should amplify the history if necessary when he has the opportunity to see the relatives or other informants at the institution. It should also be pointed out that opportunity should be given for history taking to the younger, untrained members of the medical staff. It is desirable that anamneses be secured as soon as

possible after admission and certainly not later than three months after admission.

II. *Physical Examination.* The physical examination should determine the general constitutional make-up as well as ascertain the presence or absence of disease processes or evidence of former disease conditions. A careful neurological and endocrinological examination is of special importance and a few standard anthropometric observations may furnish an indication of the constitutional physique. An important part of the physical examination should be a careful dental inspection by the dentist. Form "34 medical" of the Department of Mental Hygiene should be considered for adoption in all of the institutions for recording the physical findings. A physical examination should be made not later than one week after admission.

III. *Laboratory Examination.* A blood Wassermann should be made as a routine. Wassermann reports other than those which are completely negative with both alcoholic and cholesterinized antigens should be carefully checked by repeated examination.

A complete spinal fluid examination is indicated whenever the blood Wassermann reaction is even doubtfully positive and whenever there are indications of parental syphilis or when positive neurological signs are found.

There is some doubt as to the necessity for a routine urinalysis. However, this should be considered as to its practicability and certainly a urinalysis should be made whenever there are clinical indications.

There is considerable doubt as to the advisability of attempting to do neuropathological work in all of the institutions. Neuropathological work requires expert personnel. Well-trained and capable neuropathologists are not easily found. However, it might be advisable that even though an institution does not have any facilities for neuropathological studies that they attempt to secure autopsies so that the material can be sent to a well-organized laboratory for neuropathological work, and so that post-mortem observations of defects or diseases in other somatic systems may be made.

IV. *Mental Examination.* The Stanford Revision of the Binet-Simon test should be used in all institutions as the basis for the



statistical psychological classification. For those cases who are too low grade mentally to score on the Stanford Revision, the Kuhlmann Revision should be used as the standard test. In studying mental defectives capable of living in the community or attending school, it is advisable to supplement the Stanford revision by other tests. A qualitative analysis of the intelligence is important and is based on observations gained from a battery of tests. The psychometric examination should be evaluated by the psychologist and an interpretative summary with an attempt to indicate the practical implications derived from the test is desirable. Children who are attending school should be retested at least once every two years. All patients before being paroled should be retested and if possible should be retested before being discharged from parole.

In order to insure the psychometric work being carried out in an efficient manner it seems wise to recommend that each institution should have a position for a psychologist included in its budget. It also seems important that each institution set aside one or two rooms to which patients may come for a psychometric examination and where a sufficient variety of mental test material is provided. On page 93 of the "Outlines for Psychiatric Examinations," by Cheney, are listed a number of psychometric tests and these should comprise the basic equipment of the psychological laboratory.

In children of school age, mentally and chronologically, an educational test should be given in order to determine with some degree of accuracy what the child has learned in different school subjects. For this purpose a set of examination questions, classified according to the different school grades and based on the New York State Syllabus, is useful. Such a test is in use at the present time at two of the institutions. The Stanford Achievement Test is also a satisfactory method of determining the child's educational status.

Although no outstanding mood deviation, affective disorder or trend is likely to be found in mental defectives, nevertheless the mental age level, particularly of the moron and borderline case, does not afford an explanation of the entire maladjustment of the patient. Maladjustments usually are dependent upon the personality reactions and mental attitudes of the patient which have been conditioned by certain experiences and influences met in the envi-



ronment. Through a mental examination it is often possible to understand how the environment has modified the emotional life and mental attitudes of the child and this in turn gives a more complete understanding of the social maladjustment and may be of value in planning the treatment and training program of the child. Suggestions and an outline are given for the mental examination of children in the manual on "Outlines for Psychiatric Examinations".

It is suggested that all patients of the moron and borderline group be given a psychiatric examination as well as a psychometric examination within a month after admission.

V. *Progress Notes.* The frequency of progress notes must be determined in the individual case. As a general plan, however, a careful note should be made within one week after admission and thereafter progress notes if conscientiously written need not be made more frequently than twice a year and in many instances only once a year. In cases showing outstanding behavior problems or personality changes, progress notes should be made with sufficient frequency to give a clear picture of the developments in the case. Anything of importance that happens in connection with the patient, any change in his health, behavior or attitude, the training he has received and how he responds to it, the school progress, industrial record, are important items to be recorded in the progress notes. It is important to record at the time of happening any outstanding event or change, giving full details of the situation. Well kept progress notes are of value in administrative problems which arise in connection with individual patients.

The writer does not believe it advisable to make any recommendations regarding plans for treatment or training. Diversity in the different institutions in regard to the whole matter of therapy is something that should be encouraged. There is no evidence to show that any of the present methods of treatment or training in the institution or guidance and supervision outside of the institution are infallible. Different superintendents have different ideas about what should be done.

It is the personal opinion of the writer that there is little, if any, value in mentally deficient children attending school after they have

reached the age of 16. All indications point to the fact that by the age of 16 mental defectives have reached their educational limit so far as academic training is concerned. It must also be borne in mind that mental defectives, because they are mentally deficient, are not apt to require formal education beyond the ability to read, write and do simple arithmetic.

The majority of mental defectives present no definite problem for medical or surgical treatment beyond measures directed at improving and maintaining good general physical health. There are specific instances, however, which may call for some special therapy. For instance, there are cases with well-defined endocrine disturbances who should be given the benefit of a trial for at least a period of a year on endocrine therapy. There are also cases with one or another form of neurosyphilis who should be treated with tryparsamide injections especially if they are of the medium and higher grade types.

A good reference library is of value to any institution. In building up a reference library the needs of not only the medical staff but of the teaching staff, and social service department, and psychologist should be kept in mind. It does not seem wise to indicate the content of a reference library. This is something that should be decided by the particular interests of the staffs of each institution.

Staff meetings are an important activity and should be not only of value in securing a consensus of opinion about individual cases, but should serve as a means of education for those who attend. It is likely to be more profitable to present carefully-studied, selected cases at these conferences and to encourage a full expression of opinion from the various members of the conference.

#### DISCUSSION

DR. LITTLE: I don't know that I feel particularly competent to discuss any other than my institution. Most of my interest for more than 30 years has been devoted to building roads, digging ditches and discovering personality defects of employees so that many of the things mentioned I could not discuss. While I never was considered the most able assistant of August Hoch, yet I did spend five years under his direction more than 30 years ago and from that learned to appreciate the value of clinical work so I am all for it. I leave to others the real work of the institution. In fact, I consider it the job of the administrator to see what should be done, select people to take

charge of it and furnish them with the tools to work with so that those on the farms, in the kitchens, in clinical work, in the schools, can carry it on themselves. Although I have had to do with schools for a great many years, I am still in doubt as to just what should be done. The big thing as I see it, and that we probably accomplish, is to establish habits of industry and of doing something. The concrete thing that we teach may not be of any great value. All of these things that are being done help finally in the development of the child.

Dr. Potter has stressed the clinical work from the psychiatric side of the child. Perhaps that cannot be defined in a great many cases, but still I believe if our medical men could spend more time in studying the child the way we used to study mental cases, they would learn things of real value and that is the part of the clinical work I hope to see stressed from now on.

DR. BERNSTEIN: I am greatly interested in Dr. Potter's clinical work, but I would like to speak about one thing. I do not think he stresses vocational and educational guidance enough. I feel it is one of the most important things. I believe we should not begin at 16, 18 and 20 years of age, but at 8, 9 and 10, and that we must follow each case closely. The director of the vocation and educational guidance work in the schools of Pittsburg, impressed me when he placed on the blackboard the factors which indicated to the child what he would like to do in life. About 75 per cent of the boys and girls wanted to do what some successful older member of the family had done. If he was a successful mason, blacksmith, carpenter, teacher or whatever line he was in, if the boy admired him, he wanted to do the same sort of thing. The director adopted that as an ideal in vocational guidance in the Pittsburg schools, and in this way he tried to help the children choose what they wanted to do. There is surely something worth while in vocational guidance for us to consider.

One other thing about clinical work, I have seen many girls and boys lost because they were kept for six months or more in the institution instead of getting them out. I feel we should do more toward the manual and vocational training of the children. I should say at the end of a month or two after admission the clinical work in the majority of the cases should be practically ended. If the children are over 12 years they should begin to do specific things in a definite way. The clinical work may interfere with what you are trying to do in the practical training of children.

DR. ROWE: I certainly enjoyed hearing this very excellent paper. I thought it was interesting from the institutional point of view and trust that it will be the basis on which all of us can get together so that our work will be more uniform. I think a great deal of clinical work from the psychiatric viewpoint should be done. It has been shown that 40 per cent of our admissions had some difficulty in the community before they entered the institution and, if there are 40 per cent coming in because of behavior difficulties, there is certainly ample opportunity for clinical study.

DR. VAUX: I think Dr. Potter has made an excellent survey of the clinical work in the schools and one which the schools will be glad to study very carefully. At the time Dr. Potter made his visit to our school, he said when we asked him direct questions that he would defer his recommendations until he made his final report but at the same time we had a great many discussions during his several days' visit and it was impossible not to get some illumination on the methods he urged and on the improvements to be made, and I think besides the benefit we expect from his written report, we have already gained a great deal from his visit to the school.

MR. RIGGS: I have nothing to say in addition to what has already been said, except that I think the educational side is an important one, and the giving of vocational training so that when individuals go out into the communities as many are sure to do, they are able to do laundry work, sew or help in families. It seems to me from the public school point of view this should be mostly stressed rather than, possibly, the psychiatric end of it. Of course I am not very well acquainted with that side, but I am exceedingly interested in the educational side and I believe the vocational side is one to emphasize.

DR. SMITH: I just want to say a word about the work of the schools, from the standpoint of the medical inspector. I have seen the development of these schools from the time they first came under the direction of the Department of Mental Hygiene and there has been a considerable advance from every standpoint, especially in regard to the methods carried out and the general order and routine.

Dr. Potter has given a very good resume of the whole situation and he calls attention to the need or necessity for uniform methods and regulations to be followed out in all the schools. I, myself, as medical inspector, found that in the beginning we oftentimes were not looked upon as exactly welcome but at the present time that feeling in most of the schools has largely subsided. My own idea is that a uniform record in all the schools is an essential thing. We should have a good anamnesis and a good physical examination and I think all other procedures should be followed out very much as they are in our State hospitals. I do not want to give too much credit to the State hospitals, but there are good records in these institutions. There should be a good record of the patient from the time he entered the institution until he is discharged.

In the State schools I find everything is in the record but oftentime it is necessary to sort out matters in regard to the educational and social service features; also, the boy's or girl's adaptation in the institution; how they are working; how adapting themselves in colonies. I think that all facts should follow in chronological order, i. e., when they are admitted, when they go into colonies; when paroled; when returned from parole; in regard to general conduct, misconduct or any attempts of escape, so that anyone coming in can see in the history from beginning to end what the boy or girl has been doing. I think the doctor should make general notes from time to time in regard to all these factors. I think in the colonies it would not be a bad feature if the supervisors of the colony house would keep a record of how these boys and girls are adjusting in regard to work, what they are doing, and when they enter and leave the colony. I find that is not always done; at any rate at time of inspection.

What I have said is simply from the constructive standpoint and I do not want to criticize, but I think a great deal of progress has been made and anyone coming to the State schools finds a very good system, but I still think there are steps that can be taken for further improvement.

DR. CHENEY: You will recall that some few years ago, a medical survey was made of the State hospitals by a committee consisting of Doctors Kirby, Russell and Ross. I think we all agreed at that time that a good deal of value came out of that survey. It was because of that, that I had in mind the making of the survey of the schools and I was very glad when Dr. Parsons was agreeable to having Dr. Potter do it. I know of no one better qualified. I think something has come out of it even if nothing more than the conferences Dr. Potter has had with the superintendents and members of staffs in the various schools.

I want to speak about one thing. Dr. Bernstein called attention to the fact that Dr. Potter has spoken of the desirability of psychiatric clinical work and Dr. Bernstein calls attention to the fact that if patients are studied psychiatrically, this may prevent them from taking part in other activities. That does not happen in the State hospitals and it certainly is not our idea. If the patient is getting clinical psychiatric examination, we do not mean that he shall not have anything else to do. With our children we certainly make the clinical psychiatric studies, but we do not do only that. We carry out an educational program, physiotherapy and physical exercises and recreation at the same time the clinical study is being made. It is done with adults in the psychiatric hospitals. Clinical studies are made by doctors on services and at the same time patients are receiving occupational training of various kinds. What I want to stress is the fact that it is not our idea that the clinical psychiatric study means something which may result in the material rearranging of the whole program of the school. It is not necessary. Dr. Rowe as a man of long experience in State hospitals, is interested in making a survey of the emotional factors, in his children and finds that in 40 per cent of admissions, they have had difficulty in the community. Perhaps they would not have been admitted if they had not had these difficulties. The trouble is not their intellectual defects but their emotional difficulties, and it seems to me that it is indicated that a study should be made of the emotional reactions of the children in the State schools and that it is rather important just as are the educational and vocational activities.

I think we have in mind when we speak of making a clinical examination and making a uniform system, a sort of uniform procedure but not necessarily uniformity and regimentation. Medicine is not only a system but an art in its practice and although certain principles of records, forms and management might be uniform, I would be the last one to say that everything should be uniform in all the institutions; that would be stultifying to men trying to do a particular thing in their own way.

Dr. Potter mentioned that the outline for anamnesis incorporated in our Outlines for Psychiatric Examinations might be used in the various State schools. The question came up the other day of having accepted an outline by one of the social workers as a uniform procedure to be used throughout the system. We feel that our outline, which is prepared very definitely with the study of children in mind, may be properly used in the study of children.

Dr. Potter's work, I think, has been of great profit to all. Progress, as you know, in the raising of standards in the hospitals is slow. Those of you who can go back to Dr. Meyer's time realize it. It seems to me that the schools have been in the same situation regarding clinical records and standards that the hospitals were in a number of years ago and it was with the hope that we might get some benefit and the schools might derive some benefit that we asked Dr. Potter to make this survey.

DR. BERNSTEIN: There is one word more I want to say. I find in dealing with these children that 80 per cent of the morons come in with bad habits of life. They have lived in poor homes and they have had no definite regular habits; do not sleep regularly and do not eat regularly and as I see it, our first problem is to instill habits of regularity. If the clinical worker is going repeatedly to examine Johnny and we must keep Johnny in the institution from his work for such purpose, we lose out in many cases.

After we have gotten him started on some regular work, we don't want the habit broken but want to keep him at work because after all the morons to a great extent are going to continue to be creatures of habit. Probably the reason the Swiss watch workers



are such expert skilled workmen is because they as children see and assist the adults make watches. It is necessary to get morons into the habit of doing things well and regularly and doing it every day and I don't want that regularity of habit broken. I don't see this as a psychiatric problem or that psychiatry has much to do with it. Eighty per cent of the morons need most of all occupational and habit training and the other 20 per cent may possibly constitute psychiatric problems.

DR. GARVIN: Is not antisocial behavior largely due to distorted and warped habits of thinking?

DR. BERNSTEIN: Morons are creatures of habits to a great extent.

DR. HUMPHREYS: I would like to emphasize just one thing. I certainly do believe in the great importance of adequate histories. I believe that the study of mental deficiency is as much a part of psychiatry as the study of psychoses. I believe we are going to profit in more ways than one by careful data gathering. Mental deficiency is entering more and more into the field of psycho-biology and that demands the most extensive inventorying of the individual child. I believe psychiatry must come into its own in mental deficiency.

DR. POTTER: I would like to make just one comment. I want to make myself clear on one point and avoid any misunderstanding. The only thing I have tried to indicate is that we should learn as much as we can, with the methods and techniques that are available, about the patients who come to our State schools. Through experience we know there are certain methods of examination and fields of inquiry which could be incorporated in the case study in any institution for mental deficiency.

When it comes to the matter of treatment, treatment in the broadest sense of the word, social, educational, vocational guidance, etc., I think it would be unfortunate to think of anything in the nature of uniformity. Certainly every institution should have the fullest opportunity of trying out the ideas of its superintendent and its various staff members. If, for instance, one institution may want to specialize on the school department and carry that work out extensively; if Dr. Bernstein wants to emphasize vocational guidance, that should be done. There is no reason why any of these things could not be done in connection with treatment. Uniformity is desirable I believe only in relation to the adoption of some accepted method for studying these patients thoroughly and in the observations of the effects of various forms of treatment.



## THE BLOOD-CEREBROSPINAL FLUID BARRIER

*With Special Reference to the Changes in General Paralysis and in Dementia Præcox*

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In 1925, Walter described his method of estimating the permeability of the blood-cerebrospinal fluid barrier to bromides<sup>1</sup> and stated that in a group of normal individuals given 0.01 gm. of sodium bromide by mouth per pound of body weight thrice daily for five days the ratio of the bromide content of the blood to that of the cerebrospinal fluid ranged between 2.9 and 3.3 to 1. Subsequent investigators have since somewhat expanded these limits of normal, but have nevertheless in general agreed that patients with organic affections of the central nervous system tend to show blood-cerebrospinal fluid ratios below 3.0 ("decreased barrier permeability") on the Walter test, whereas in schizophrenia the ratios range from 2.8 to 4.0 or over.<sup>2</sup> Unfortunately, however, in nearly all of the reported studies the possibility of a varying bromide content of the cerebrospinal fluid in different loci in the same patient was not sufficiently controlled, nor were the possibly fortuitous deviations of the data obtained by Walter's test checked by adequate statistical methods.

It is the purpose of the present communication to report the results of a study of the bromide content of both the lumbar and cisternal fluids in 28 paretic and 22 schizophrenic patients tested by the Walter method and to analyze the data so obtained according to a standard statistical technique.

### MATERIAL AND METHODS

Hospital patients between 20 and 50 years of age were chosen for this study. Our group of paretic patients consisted of individuals who had had physical, serologic, and spinal fluid findings pathognomonic of paresis and who, despite a routine course of anti-paretic treatment,<sup>3</sup> had not improved sufficiently to justify parole. Our

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schizophrenic group included patients who had been diagnosed as such only after clinical observation lasting from four months to several years. According to the Walter method, all patients were given 0.01 gm. of sodium bromide in aqueous solution by mouth per pound of body weight three times a day for five days. On the afternoon of the sixth day, 5 c.c. of cisternal fluid, 15 c.c. of spinal fluid and 25 c.c. of venous blood were removed, the order of removal of the samples of cisternal and spinal fluid being reversed in alternate cases as a further control. The bromide content of all the samples was then determined by the original Walter technique and the results independently checked by the Toxotéous method.<sup>4</sup>

*Statistical Technique:* For each series of observations the mean, its standard deviation and its probable error (P. E.) were calculated by standard statistical methods.<sup>5</sup> The difference between any two comparable means was considered significant only when its critical ratio (Diff./P. E. d.) exceeded 3.0; or, in other words, when the odds were better than 22 to 1 that an actual difference inherent in the respective data of the series compared existed.

### RESULTS

Our data are presented in Table I and their statistical elaboration in Tables II and III. From the latter analyses these conclusions become evident:

1. The average bromide content of the lumbar fluid of our parietic patients tested by the Walter method exceeds that of the schizophrenic group by  $3.64 \pm 0.893$  mgm. per 100 c.c. (Table II, Series 1 and 2).

2. The mean bromide content of the cisternal fluid of our parietic group also exceeds that of the schizophrenic series (Table II, Series 3 and 4), the individual differences here being somewhat smaller but more constant.

3. Since the respective blood bromide contents of the two groups do not differ significantly (Table II, Series 5 and 6), these findings indicate a definitely lowered "blood-cerebrospinal fluid barrier permeability" to bromides in the parietic as compared with the schizophrenic series. This difference in barrier permeability is confirmed by the analysis of the respective blood-lumbar fluid

and blood-cisternal fluid ratios of the two groups (Table III, Series 1 to 4).

4. Inasmuch as our data did not include a pure "control" series, we analyzed the blood-lumbar fluid ratios reported by Malamud et. al.<sup>6</sup> for a group of 41 patients whose barrier permeability was presumably normal (Table III, Series 5) and utilized the constants so obtained for comparison with our own. It then became evident that:

(a) The mean blood-spinal ratio of our paretic group did not differ significantly from the mean ratio of this control series, whereas

(b) the mean ratio of our schizophrenic group exceeded the control by  $0.19 \pm 0.036$ —an apparently determinative difference.

#### COMMENT

It is interesting to note that in agreement with the findings of Katzenelbogen<sup>2d</sup> and others, the majority of the individual blood-cerebrospinal fluid ratios in each psychotic group fell within the range of normal—2.8 to 3.2. Nevertheless, careful statistical analysis of the present data reveals an unequivocal difference between the blood-lumbar fluid ratios of the paretic series as compared with those of the schizophrenic group. Since this difference applies also to the respective blood-cisternal fluid ratios of each series,<sup>7</sup> a definite dissimilarity in the blood-cerebrospinal fluid barrier permeability in the contrasted psychoses seems definitely demonstrated.

Comparisons of our data with those of Malamud indicate that the blood-lumbar fluid ratios of our paretic patients were only slightly below his normals, whereas those in our schizophrenic series ranged definitely above. In evaluating these differences, however, it must be remembered that the technique employed in Malamud's laboratory may have differed from that used in our own, so that exact comparison of our results with his may not be determinative.

#### SUMMARY

Twenty-eight paretic and 22 schizophrenic patients were given 0.01 gm. of sodium bromide by mouth per pound of body weight thrice daily for five days, after which the bromide content of their

TABLE I. RESULTS OF WALTER'S BROMIDE TEST IN 27 PARETIC AND 22 SCHIZOPHRENIC PATIENTS

Case No.	PARETIC				SCHIZOPHRENIC						
	Race	Sex	Age	Bromide in mgm. per 100 c.c.		Race	Sex	Age	Bromide in mgm. per 100 c.c.		
				Blood	L. F.				C.F.	Blood	L. F.
1	c.	m.	50	41.0	13.6	w.	m.	22	25.5	7.4	6.9
2	c.	m.	48	45.4	12.7	w.	m.	27	45.1	14.2	13.1
3	w.	m.	44	50.0	19.8	ch.	m.	28	53.8	16.6	15.6
4	c.	f.	46	40.0	15.9	w.	f.	35	22.3	7.7	6.9
5	c.	m.	46	49.0	18.7	w.	f.	46	50.0	15.3	14.6
6	c.	m.	47	80.6	37.6	c.	f.	32	53.8	20.8	15.2
7	c.	m.	28	...	16.2	c.	f.	36	49.5	16.5	14.8
8	c.	m.	36	47.2	13.9	w.	f.	45	45.8	13.5	12.6
9	c.	m.	36	42.7	12.7	w.	f.	50	45.0	13.1	11.6
10	c.	m.	50	57.2	16.9	w.	f.	22	56.3	16.7	14.6
11	c.	m.	48	...	17.9	c.	f.	26	29.1	18.6	18.3
12	w.	m.	46	47.6	16.0	w.	f.	18	27.5	8.1	7.9
13	w.	m.	50	52.6	16.0	w.	m.	36	57.5	17.2	16.1
14	c.	f.	51	57.2	19.0	c.	m.	28	44.8	12.7	11.7
15	w.	f.	49	51.5	17.7	w.	m.	20	82.1	26.9	24.3
16	c.	f.	46	21.9	6.7	w.	m.	28	48.3	16.0	14.2
17	c.	f.	48	47.2	15.6	w.	m.	26	49.1	16.7	13.4
18	c.	f.	50	37.0	...	w.	m.	39	49.5	15.9	14.3
19	w.	m.	51	50.5	15.7	w.	m.	43	52.2	17.9	16.7
20	j	m.	33	54.0	20.0	w.	m.	27	56.3	15.9	15.2
21	c.	m.	29	46.7	15.8	c.	m.	26	63.3	18.5	17.0
22	c.	m.	47	43.5	17.7	w.	f.	45	21.7	8.1	7.1
23	c.	m.	38	60.2	20.1	w.	f.	45	21.7	8.1	7.1
24	w.	m.	47	52.3	18.9	w.	m.	27	56.3	15.9	15.2
25	w.	m.	48	60.5	17.4	w.	m.	27	56.3	15.9	15.2
26	w.	m.	46	19.4	8.4	w.	m.	26	63.3	18.5	17.0
27	c.	m.	43	44.6	16.2	c.	m.	26	63.3	18.5	17.0
28	c.	m.	39	47.6	18.6	w.	f.	45	21.7	8.1	7.1

Legend: c.—colored; C. F.—cisternal fluid; ch.—Chinese; f.—female; j.—Japanese; L. F.—lumbar fluid; m.—male; w.—white.

LEGEND: c.—colored; C. F.—cisternal fluid; ch.—Chinese; f.—female; j.—Japanese; L. F.—lumbar fluid; m.—male; w.—white.

blood, spinal fluid and cisternal fluid was determined. A statistical analysis of the data showed that the mean bromide contents of both the lumbar and cisternal fluids of the paretic group exceeded those of the schizophrenic group by  $3.64 \pm 0.0983$  and  $3.29 \pm 0.604$  mgm. per 100 c.c., respectively, indicating a significantly lowered blood-cerebro-spinal fluid barrier permeability to bromides in paresis as contrasted with schizophrenia. That the barrier permeability in paresis is lower than normal whereas that in schizophrenia is abnormally high is indicated by contrasting the blood-cerebrospinal fluid ratios of both psychotic groups with those of a group of normals reported by Malamud. However, the latter comparisons may not be determinative because of the possibly different techniques employed.

TABLE II. THE COMPARATIVE ANALYSIS OF THE BROMIDE CONTENTS OF THE LUMBAR FLUID, CISTERNAL FLUID AND BLOOD OF 27 PARETIC AND 22 SCHIZOPHRENIC PATIENTS ON WALTER'S BROMIDE TEST

Series No.	Series	N.	Mean	$\delta$ (S.D.)	P. E.	Series compared	Diff.	P.E.d	C.R.d	Conclusions	
1	P.	Lf.	27	17.00	5.42	0.69	1-2	3.64	0.89	4.06	The bromide content of the Lf. of P. pts. on Walter's bromide test exceeds that of S. pts. by a mean diff. of $3.64 \pm 0.893$ mgm. per c.c.
2	S.	Lf.	21	13.36	3.88	0.57					
3	P.	Cf.	25	15.32	2.49	0.33	3-4	3.29	0.60	5.43	The bromide content of the Cf. of P. pts. on Walter's test exceeds that of S. pts. by a mean diff. of $3.29 \pm 0.604$ mgm. per c.c.
4	S.	Cf.	22	11.93	3.38	0.48					
5	P.	Bl.	26	48.37	11.51	1.53	5-6	1.55	2.52	0.61	No significant difference in blood bromides between the paretic and schizophrenic series on Walter's bromide test.
6	S.	Bl.	22	46.82	13.91	2.00					

LEGEND: Cf.—cisternal fluids; C. R.—critical ratio; Diff.—difference between comparable means; Lf.—lumbar fluid; N.—number of cases in series; P.—paretic patients; P. E.—probable error of the mean; P. E. d—probable error of the difference between comparable means; S.—schizophrenic patients;  $\delta$  (S.D.)—standard deviation of the mean.

TABLE III. THE COMPARATIVE ANALYSIS OF THE BLOOD-SPINAL FLUID AND BLOOD-CISTERNAL FLUID RATIOS OF 27 PARETIC AND 22 SCHIZOPHRENIC PATIENTS  
WALTER'S BROMIDE TEST

Series No.	Series	N.	Mean	6 (S.D.)	P. E.	Series compared	Diff.	P. E. d	C. R. d	Conclusions
1	P. ——— Bl. Lf.	27	2.95	0.346	0.045					The blood-spinal fluid ratio of schizophrenic patients on Walter's test exceeds that of paretic patients by a mean difference of $0.24 \pm 0.057$ .
							2.1	0.24	0.057	
2	S. ——— Bl. Lf.	22	3.19	0.252	0.034					
3	P. ——— Bl. Cf.	24	3.26	0.437	0.060					The blood-cisternal fluid ratio of schizophrenic patients on Walter's bromide test exceeds that of paretic patients by a mean difference of $0.226 \pm 0.067$ .
							4.3	0.226	0.067	
4	S. ——— Bl. Cf.	22	3.52	0.202	0.029					
							5.1	0.05	0.049	No significant difference between the mean blood-lumbar fluid ratio of our paretic group and that of Malamud's normals.
5	N. ——— Bl. Lf.	41	3.00	0.195	0.020					The blood-lumbar fluid ratio of our schizophrenic series exceeded that of Malamud's normal group by $0.19 \pm 0.036$ .
							2.5	0.19	0.036	

LEGEND: Bl.—blood; Cf.—cisternal fluid; C. R.—critical ratio; Diff.—difference between comparable means; Lf.—lumbar fluid; N.—number of cases in series; No.—series of normals reported by Malamud et. al.; P.—paretic patients; P. E.—probable error of the mean; P. E. d—probable error of the difference between comparable means; S.—schizophrenic patients; 6 (S.D.)—standard deviation of the mean.

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## THE PREVALENCE OF MENTAL DISEASES AMONG THE URBAN AND RURAL POPULATIONS OF NEW YORK STATE

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As a result of the accumulation of standardized statistical data, it has been shown that there are significant differences between urban and rural populations in the relative prevalence of mental diseases. It was, indeed, suspected, even prior to the first statistical demonstration of the fact, that the rates differed widely, but strangely enough, it was asserted that the farmer, or the rural inhabitant, was more beset with mental disease than the urban dweller. This was suggested by the distinguished sociologist, Franklin H. Giddings, who wrote in 1896 that "the isolated farmer and his family have begun to be affected by the strain of modern life in a deplorable way. They are no longer ignorant of the luxuries of the towns, and a simple manner of life no longer satisfies them. The home must be remodelled and refurnished; the table must be varied; clothing must be 'in style', and the horses, carriages and harnesses must be more costly. The impossibility of maintaining this scale of expense under existing agricultural conditions embitters life and finally in many cases, destroys the mental balance.'" Others attributed high rates of mental disease to farmers' wives, in consequence of their supposed lonely existence.

These represented purely subjective judgments, for at the time of publication there were no data available to justify any conclusions, whatsoever, concerning the prevalence of mental disease among the rural population in general, or among farmers in particular. The first authoritative statistical analysis of the environmental distribution of patients with mental disease may be found in the bulletin on the Insane and Feeble-minded in Institutions: 1910, published by the Bureau of the Census.<sup>2</sup> In that report, as in all subsequent studies, communities with a population of less than 2,500 were considered rural; those with a population of 2,500 or more were regarded as urban. On the basis of total admissions to hospitals for the insane in the United States in 1910, it was shown that the rural rate was 41.4 per 100,000 population, compared with

a rate of 86.0 in urban communities. Furthermore, the rate varied directly with size of population. Thus, in cities with a population of 2,500 to 10,000 there were 70.2 admissions per 100,000 population. The rate increased to a maximum of 102.8 in cities with a population of 500,000 and over. The only exception to the upward trend occurred in cities of 50,000 to 100,000 population, in which there was a rate of 77.2, compared with a rate of 86.5 in cities with a population of 25,000 to 50,000.

These general results were confirmed by the next census of the insane by the Bureau of the Census, which included data for 1922. An analysis of the place of residence of first admissions in 1922 showed that the urban population had a rate of 78.8 per 100,000 population, compared with a rate of 41.1 among the rural population. Among the urban population the rate increased progressively with size of city. The rate was 54.8 in cities of 2,500 to 10,000 population; 65.3 in cities of 10,000 to 25,000; 73.2 in cities of 25,000 to 100,000, and a maximum of 92.5 in cities of 100,000 population and over.<sup>3</sup>

In commenting upon the results of the 1910 census of the insane, the report stated: "In general, these statistics indicate that there is relatively more insanity in cities than in country districts and in large cities than in small cities, although to some extent the differences may be accounted for by differences between city and country as regards the tendency to place cases of insanity under institutional care. The figures may also be affected in some degree by the accident of location of the hospitals for the insane. Studies made in New York State show that the proportion of admissions from a county in which a hospital is located is always greater than from other counties and that the proportion decreases with the distance from the hospitals. The influence of this factor upon the comparison between city and country, however, would not everywhere be uniform . . . Probably it does not go very far toward explaining the higher ratio of admissions from the urban population.'"

It is undoubtedly true that the proximity of a hospital tends to affect the admission rate, but with the continued growth of hospital accommodations, the greater ease of transportation, and the establishment of hospital districts, as in the State of New York, the force

of such environmental selection is weakened. Whatever influence it may have exerted in earlier decades, it is reasonably certain that it cannot explain current environmental differences in rates of mental disease. It appears desirable to re-examine the nature of such differences on the basis of the latest available information, and to analyze them with as much detail as practicable. With this end in view, all the first admissions to the New York civil State hospitals during the three years ended June 30, 1931, were tabulated with respect to place of residence. Average annual rates of first admissions were computed for such period for each of the units of population under consideration in this study. Following the usual practice, all communities with a population of less than 2,500 were considered as rural. All larger communities were classified as urban.

There were 26,854 first admissions to the New York civil State hospitals during the three fiscal years ended June 30, 1931. Of these 23,801, or 88.6 per cent, were from an urban environment, and 3,053, or 11.4 per cent, from a rural environment. The detailed classification of the psychoses among the urban first admissions is shown in Table 1.

Of the 23,801 urban first admissions, 6,529, or 27.4 per cent, were cases of dementia præcox; 3,069, or 12.9 per cent, cases of manic-depressive psychoses; and 1,513, or 6.4 per cent, cases of alcoholic psychoses. Other large groups included psychoses with cerebral arteriosclerosis, general paralysis, and senile psychoses with 14.1, 10.7 and 8.4 per cent, respectively, of the total. Important sex differences may be noted as follows: The senile psychoses included 11.3 per cent of the female first admissions but only 6.0 per cent of the males. The manic-depressive psychoses included 17.5 per cent of the females, and 9.1 per cent of the males. General paralysis, on the other hand, included 15.3 per cent of the males, but only 5.0 per cent of the females. The alcoholic psychoses included 9.6 per cent of the males and 2.4 per cent of the females.

The corresponding distribution of the psychoses among the rural first admissions is shown in Table 2. Important differences occur as follows. Dementia præcox included 19.8 per cent of the total, compared with 27.4 per cent among the urban group. The senile

psychoses, on the other hand, included 12.9 per cent of the rural group, compared with only 8.4 per cent of the urban group. This is due primarily to the high percentage among rural males. There was a marked difference in general paralysis, this disorder including only 6.1 per cent of the rural, compared with 10.7 per cent of the urban first admissions. The contrast was especially noteworthy among males, general paralysis including 15.3 per cent of the urban male group and only 8.2 per cent of the rural male group.

The 23,801 urban first admissions represented an average annual rate of 75.7 per 100,000 population. The complete distribution is shown in Table 1. The psychoses with the highest rates of first admission appear in the following order: dementia præcox, 20.8; psychoses with cerebral arteriosclerosis, 10.7; manic-depressive psychoses, 9.8; general paralysis, 8.1; senile psychoses, 6.4; and alcoholic psychoses, 4.8.

During the interval 1915 to 1920, there was an average annual rate of first admissions of 69.5 per 100,000 population in the urban communities of New York State.<sup>5</sup> In slightly over a decade, therefore, the rate had increased by 8.9 per cent. The increase resulted primarily from the greater prevalence of psychoses with cerebral arteriosclerosis. In 1915-1920 the average annual rate for this group of psychoses was only 4.2 per 100,000 urban population, in contrast with an average annual rate of 10.7 during the interval 1929-1931. The urban rate of first admissions with alcoholic psychoses also increased in the interval from 3.7 to 4.8. General paralysis, on the other hand, decreased from a rate of 9.8 to 8.1.

The principal sex differences in average annual rates of urban first admissions in 1929-1931 were as follows: in dementia præcox, 22.4 for males and 19.1 for females; in psychoses with cerebral arteriosclerosis, 12.0 for males and 9.4 for females; in senile psychoses, 5.0 for males and 7.7 for females; in general paralysis, 12.8 for males and 3.4 for females; in alcoholic psychoses, 8.0 for males and 1.6 for females. Among both sexes the highest rate occurred in dementia præcox. The remaining principal psychoses arranged themselves in the following order. Among males: general paralysis, psychoses with cerebral arteriosclerosis, alcoholic psychoses, and senile psychoses; among females: manic-depressive psychoses,

psychoses with cerebral arteriosclerosis, senile psychoses, general paralysis and involution melancholia.

TABLE 1. URBAN FIRST ADMISSIONS TO THE NEW YORK CIVIL STATE HOSPITALS DURING THE FISCAL YEARS 1929 TO 1931

Psychoses	Number of first admissions			Per cent of total first admissions			Average annual rate per 100,000 urban population		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Traumatic .....	222	41	263	1.7	0.4	1.1	1.4	0.3	0.8
Senile .....	785	1,213	1,998	6.0	11.3	8.4	5.0	7.7	6.4
With cerebral arteriosclerosis .....	1,872	1,490	3,362	14.3	13.9	14.1	12.0	9.4	10.7
General paralysis .....	2,004	595	2,539	15.3	5.0	10.7	12.8	3.4	8.1
With cerebral syphilis .....	177	87	264	1.4	0.8	1.1	1.1	0.6	0.8
With Huntington's chorea .....	12	13	25	0.1	0.1	0.1	0.1	0.1	0.1
With brain tumor .....	23	11	34	0.2	0.1	0.1	0.1	0.1	0.1
With other brain or nervous diseases .....	203 <sup>*</sup>	122	325	1.6	1.1	1.4	1.3	0.8	1.0
Alcoholic .....	1,256	257	1,513	9.6	2.4	6.4	8.0	1.6	4.8
Due to drugs and other exogenous toxins .....	37	31	68	0.3	0.3	0.3	0.2	0.2	0.2
With pellagra .....	..	4	4	..	*	*	..	**	**
With other somatic diseases .....	188	310	498	1.4	2.9	2.1	1.2	2.0	1.6
Manic-depressive .....	1,188	1,881	3,069	9.1	17.5	12.9	7.6	11.9	9.8
Involution melancholia .....	202	404	606	1.5	3.8	2.5	1.3	2.6	1.9
Dementia praecox .....	3,514	3,015	6,529	26.9	28.1	27.4	22.4	19.1	20.8
Paranoia or paranoid conditions .....	82	109	191	0.6	1.0	0.8	0.5	0.7	0.6
Epileptic psychoses .....	237	204	441	1.8	1.9	1.9	1.5	1.3	1.4
Psychoneuroses and neuroses .....	157	239	396	1.2	2.2	1.7	1.0	1.5	1.3
With psychopathic personality .....	290	245	535	2.2	2.3	2.3	1.9	1.6	1.7
With mental deficiency .....	804	304	608	2.3	2.8	2.6	1.9	1.9	1.9
Undiagnosed psychoses .....	179	148	327	1.4	1.4	1.4	1.1	0.9	1.0
Without psychosis .....	135	71	206	1.0	0.7	0.9	0.9	0.5	0.7
Total .....	13,067	10,734	23,801	100.0	100.0	100.0	83.4	68.1	75.7

\*Less than 0.05 per cent.

\*\*Less than 0.05 per 100,000.



## THE PREVALENCE OF MENTAL DISEASES

TABLE 2. RURAL FIRST ADMISSIONS TO THE NEW YORK CIVIL STATE HOSPITALS DURING THE FISCAL YEARS 1929 TO 1931

Psychoses	Number of first admissions			Per cent of total first admissions			Average annual rate per 100,000 rural population		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Traumatic .....	18	..	18	1.1	..	0.6	0.6	..	0.3
Senile .....	209	185	394	12.4	13.5	12.9	6.5	6.2	6.4
With cerebral arteriosclerosis .....	271	177	448	16.1	12.9	14.7	8.5	5.9	7.3
General paralysis .....	138	48	186	8.2	3.5	6.1	4.3	1.6	3.0
With cerebral syphilis .....	13	4	17	0.8	0.3	0.6	0.4	0.1	0.3
With Huntington's chorea .....	7	7	14	0.4	0.5	0.4	0.2	0.2	0.2
With brain tumor .....	3	3	6	0.2	0.2	0.2	0.1	0.1	0.1
With other brain or nervous diseases .....	17	16	33	1.0	1.2	1.1	0.5	0.5	0.5
Alcoholic .....	135	15	150	8.0	1.1	4.9	4.2	0.5	2.4
Due to drugs and other exogenous toxins .....	2	7	9	0.1	0.5	0.3	0.1	0.2	0.1
With pellagra .....	1	1	2	0.1	0.1	0.1	*	*	*
With other somatic diseases .....	25	60	85	1.5	4.4	2.8	0.8	2.0	1.4
Manic-depressive .....	191	245	436	11.3	17.9	14.3	6.0	8.2	7.1
Involution melancholia .....	56	94	150	3.3	6.9	4.9	1.8	3.2	2.4
Dementia præcox .....	814	289	603	18.7	21.1	19.8	9.8	9.7	9.8
Paranoia or paranoid conditions .....	17	16	33	1.0	1.2	1.1	0.5	0.5	0.5
Epileptic psychoses .....	49	31	80	2.9	2.3	2.6	1.5	1.0	1.3
Psychoneuroses and neuroses .....	28	53	81	1.7	3.9	2.7	0.9	1.8	1.3
With psychopathic personality .....	50	25	75	3.0	1.8	2.4	1.6	0.8	1.2
With mental deficiency .....	80	58	138	4.8	4.2	4.5	2.5	1.9	2.2
Undiagnosed psychoses .....	17	11	28	1.0	0.8	0.9	0.5	0.4	0.5
Without psychosis .....	42	25	67	2.5	1.8	2.2	1.3	0.8	1.1
Total .....	1,683	1,370	3,053	100.0	100.0	100.0	52.7	46.0	49.5

\*Less than 0.05 per 100,000.

The average annual rate of rural first admissions during the three years ended June 30, 1931, was 49.5 per 100,000 population. The highest rate, 9.8, occurred in dementia præcox. Psychoses with cerebral arteriosclerosis, manic-depressive and senile psychoses followed with rates of 7.3, 7.1, and 6.4, respectively. General paralysis and alcoholic psychoses had relatively low rates of 3.0, and 2.4, respectively. The latter was also that of involution melancholia.

The average annual rural rate of first admissions in New York State during 1915-1920 was 42.5.<sup>6</sup> The average annual rural rate in 1930 therefore represented an increase of 16.4 per cent, compared with an increase of only 8.9 per cent in the urban rate. All the major psychoses, with the exception of the senile psychoses, showed increased rates during the interval. But the principal increase occurred in psychoses with cerebral arteriosclerosis, the annual rate advancing from 3.5 to 7.3. In the alcoholic psychoses the rate grew from 1.6 to 2.4. Dementia præcox advanced from a rate of 7.8 to 9.8.

It may be noted that the senile psychoses showed the same rate in both urban and rural environments in 1930. In involution melancholia and in psychoses with mental deficiency the rural rates exceeded those of the urban areas. In all the remaining psychoses, however, the urban rates were much higher. The difference in dementia præcox is striking.

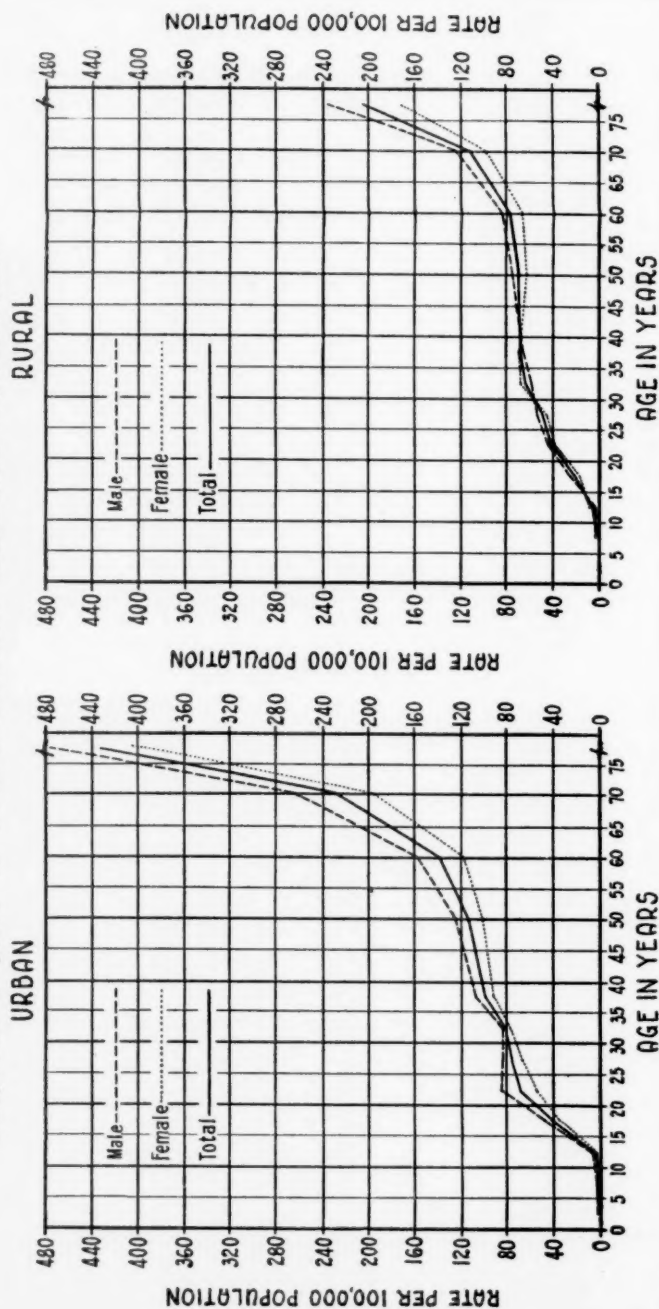
Sex differences in rural rates are similar to those of an urban environment, with two exceptions. In dementia præcox both sexes have an almost identical rate. In the senile psychoses the male rate exceeds that of the females.

#### AGE AND RATES OF FIRST ADMISSIONS

The average annual rates of first admissions (all psychoses) for both urban and rural populations in the State of New York are shown by age in Table 3, and are illustrated in Graph 1.

The rate is negligible under 10 years of age. Among the urban population there was a rate of 4.7 per 100,000 population at 10 to 14 years of age. The rate rose steadily, thereafter, to a maximum of 432.4 at 75 years and over. The increase was especially rapid after

GRAPH 1 - AVERAGE ANNUAL NUMBER OF URBAN AND RURAL FIRST ADMISSIONS TO THE NEW YORK CIVIL STATE HOSPITALS DURING THE FISCAL YEARS 1929 TO 1931, PER 100,000 OF CORRESPONDING GENERAL POPULATION



65 years of age. Among males the rate grew from 5.5 at 10 to 14 years to 474.5 at 75 years and over. Between the intervals 20 to 24 years and 30 to 34 years there was a slight, but probably random, decrease. The female trend was similar to that of the males, though lower at corresponding ages. The female urban rate advanced from 3.8 at 10 to 14 years to 402.7 at 75 years and over.

The rural population had a rate of 2.5 per 100,000 population at 10 to 14 years. As with the urban population, the rate increased steadily with age, reaching a maximum of 202.7 at 75 years and over. The rural rates are much lower than the urban rates, however. The rural male rates increased from 2.1 at 10 to 14 years to 236.3 at 75 years and over. Rural females had a rate of 2.9 at 10 to 14 years. There was a growth to a rate of 67.4 at 30 to 34 years, and a subsequent decline to a rate of 64.3 at 45 to 54 years. The rate increased thereafter to a maximum of 170.6.

TABLE 3. AVERAGE ANNUAL RATES OF FIRST ADMISSIONS TO THE NEW YORK CIVIL STATE HOSPITALS, BY AGE GROUPS, AMONG URBAN AND RURAL POPULATIONS, 1929 TO 1931, WITH RATIOS OF CORRESPONDING RATES

Age (years)	Average annual urban rates of first admissions			Average annual rural rates of first admissions			Ratio of urban to rural rates		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Under 5 .....	0.2	0.1	0.1	..	..	..	..	..	..
5-9 .....	1.9	0.8	1.4	0.3	..	0.2	6.3	..	7.0
10-14 .....	5.5	3.8	4.7	2.1	2.9	2.5	2.6	1.3	1.9
15-19 .....	48.5	34.9	41.5	24.4	17.2	21.0	2.0	2.0	2.0
20-24 .....	84.0	54.2	68.5	43.4	40.7	42.1	1.9	1.3	1.6
25-29 .....	83.8	66.6	75.1	52.5	44.9	48.8	1.6	1.5	1.5
30-34 .....	83.7	77.0	80.3	58.2	67.4	62.7	1.4	1.1	1.3
35-44 .....	105.8	90.9	98.6	65.2	65.9	65.5	1.6	1.4	1.5
45-54 .....	124.9	101.1	113.3	74.6	64.3	69.7	1.7	1.6	1.6
55-64 .....	158.2	116.8	137.0	83.2	66.9	75.5	1.9	1.7	1.8
65-74 .....	264.8	194.9	227.3	123.2	97.2	110.8	2.1	2.0	2.1
75 and over..	474.5	402.7	432.4	236.3	170.6	202.7	2.0	2.4	2.1
All ages .....	83.4	68.1	75.7	52.7	46.0	49.5	1.6	1.5	1.5

Table 3 also includes a comparison of the urban and rural rates of first admissions. Because of the few admissions at ages under 15 years the rates in these intervals cannot be considered reliable. At 15 to 19 years, however, the urban rate exceeded the rural rate in the ratio of 2.0 to 1. The relative excess of the urban rate then

decreased through the interval 30 to 34 years, where the ratio was only 1.3 to 1. Thereafter the urban rate grew more rapidly, and the urban excess increased, reaching a maximum ratio of 2.1 to 1 at 65 years and over. Males and females show similar trends. The male ratios, however, are generally in excess of the corresponding female ratios, the most important exception occurring at 75 years and over where the ratios are 2.0 to 1 and 2.4 to 1 for males and females, respectively.

It is thus evident that rates of first admissions are correlated with age, and that the general rates of first admissions are therefore influenced by the age constitutions of the rural and urban populations. Since rates of first admissions increase with advancing age, older populations will tend to have higher rates than younger populations. According to the Federal census of April 1, 1930, the urban population of New York State was younger than the rural populations. The average ages were 30.5 years and 32.7 years for urban and rural populations, respectively. Among males the corresponding averages were 30.3, and 32.8 years, and among females, 30.7, and 32.7 years. The rural population showed greater age variation than the urban population, the standard deviations (in years) being 21.5 and 18.8, respectively. The complete age distributions, in per cent, are shown in Table 4. It may be noted that the rural population is relatively in excess at 14 years and under, and again at 50 years and over, whereas the urban population shows a relative excess in the intervals from 15 to 45 years.

We must therefore compare urban and rural rates of first admission on the basis of comparable age distributions. This may be accomplished by applying the specific rates of first admissions in urban and rural populations to a common standard, namely the population of the State of New York, aged 15 years and over, as shown by the Federal census of April 1, 1930. The resulting rates are summarized in Table 15. (See page 83.)

On the basis of crude rates the urban population had a rate of first admissions in excess of that of the rural population in the ratio of 1.5 to 1. As the rural population is older, however, the true ratio should be somewhat greater. This is shown in the process of stand-

ardization, the standardized rates being 102.7 and 61.6 for the urban and rural populations, respectively, giving a ratio of 1.7 to 1. Among males, standardization resulted in a relative increase in the urban rate of first admissions, the ratio of the urban to the rural rate increasing from 1.6 to 1, to 1.8 to 1. Among females, however, standardization did not affect the relative order of the two rates. It therefore appears that, when age is taken into account, the urban rate of first admissions exceeds the rural rate by 70 per cent. Among males and females the corresponding excess is 80 per cent and 50 per cent, respectively.

TABLE 4. AGE DISTRIBUTION, IN PER CENT, OF THE URBAN AND RURAL POPULATIONS OF THE STATE OF NEW YORK, APRIL 1, 1930

Age (years)	Urban			Rural		
	Males	Females	Total	Males	Females	Total
Under 5 .....	7.9	7.6	7.7	8.3	8.6	8.4
5-9 .....	8.6	8.3	8.5	9.3	9.5	9.4
10-14 .....	8.5	8.3	8.4	9.2	9.3	9.2
15-19 .....	8.4	8.7	8.6	8.3	8.0	8.2
20-24 .....	9.0	9.8	9.4	7.2	6.9	7.1
25-29 .....	9.2	9.5	9.4	6.6	6.7	6.6
30-34 .....	9.0	8.9	8.9	6.7	7.0	6.8
35-39 .....	9.0	8.5	8.8	7.2	7.4	7.3
40-44 .....	7.8	7.1	7.5	6.9	6.7	6.8
45-49 .....	6.4	6.0	6.2	6.3	6.2	6.2
50-54 .....	5.2	5.0	5.1	5.8	5.6	5.7
55-59 .....	3.8	3.9	3.8	5.0	4.9	5.0
60-64 .....	2.9	3.1	3.0	4.3	4.2	4.3
65-69 .....	2.0	2.2	2.1	3.5	3.4	3.4
70-74 .....	1.2	1.5	1.3	2.6	2.6	2.6
75-79 .....	0.6	0.8	0.7	1.6	1.6	1.6
80-84 .....	0.2	0.4	0.3	0.7	0.9	0.8
85 and over .....	0.1	0.2	0.2	0.3	0.4	0.4
Unknown .....	0.1	0.1	0.1	0.1	0.1	0.1
Total .....	100.0	100.0	100.0	100.0	100.0	100.0

The preceding analysis thus clearly shows that there is a greater incidence of mental disease in the urban population than in the rural population. The differentiation was based upon the fact that the former included all geographical units with a population of 2,500, or more. The rural grouping consisted of populations of less than 2,500. It is obvious, however, that a unit such as 2,500 and over does not embrace a uniform class. At one limit there are



communities which in almost every respect are rural in character, except that they have slightly more than 2,500 inhabitants. At the other extreme is New York City, with an immense population, differing in important respects from both the rural population and the remaining urban centers. Its principal characteristic is that of a more youthful population, a fact set forth in Table 5.

TABLE 5. AGE CONSTANTS OF THE URBAN AND RURAL POPULATIONS OF THE STATE OF NEW YORK, APRIL 1, 1930

	Average age (years)			Standard deviation (years)		
	Males	Females	Total	Males	Females	Total
New York State . . . . .	30.7±0.01	30.9±0.01	30.8±0.01	19.1±0.01	19.4±0.01	19.3±0.01
New York City . . . . .	29.9±0.02	30.0±0.02	30.0±0.01	18.1±0.01	18.3±0.01	18.2±0.01
Buffalo . . . . .	30.1±0.06	30.3±0.06	30.2±0.04	20.0±0.04	19.3±0.04	19.1±0.03
Rochester . . . . .	31.6±0.08	32.3±0.08	32.0±0.06	19.4±0.06	19.8±0.06	19.6±0.04
Syracuse . . . . .	31.4±0.10	31.9±0.10	31.7±0.07	19.4±0.07	19.9±0.07	19.6±0.05
Cities having a population of						
100,000-200,000 . . . . .	31.0±0.07	31.9±0.07	31.4±0.05	19.2±0.05	20.0±0.05	19.4±0.04
25,000-100,000 . . . . .	31.3±0.05	32.2±0.05	31.8±0.04	19.4±0.04	19.8±0.04	19.8±0.03
10,000-25,000 . . . . .	31.3±0.05	32.2±0.05	31.7±0.04	19.9±0.04	20.4±0.04	20.2±0.03
2,500-10,000 . . . . .	31.7±0.06	32.8±0.06	32.3±0.04	20.3±0.04	20.7±0.04	20.4±0.03
Rural . . . . .	32.8±0.03	32.7±0.03	32.7±0.02	21.4±0.02	21.6±0.02	21.5±0.01

But New York City also differs from the remainder of the State in such important characteristics as the relative frequencies of native and foreign stock, and of negro population. Mental disease is correlated with such factors, being higher among the foreign-born whites than among the native whites, and higher among negroes than whites. Such characteristics vary among the populations of the several cities. It is therefore important to consider the incidence of mental disease among different types of urban populations.

In Table 6 there are presented rates of first admissions for all psychoses combined. The average annual rate for the State of New York was 71.4 per 100,000 population. The rates rose, with one exception, from a minimum of 49.5 among the rural population to a maximum of 81.3 in cities with a population of 100,000 to 200,000. The larger cities, however, do not show a similar progression. Buffalo, in fact, had a lower rate than other urban communities.

TABLE 6. NUMBER OF FIRST ADMISSIONS TO THE NEW YORK CIVIL STATE HOSPITALS DURING THE THREE YEARS ENDED JUNE 30, 1931, AND AVERAGE ANNUAL RATE PER 100,000 GENERAL POPULATION, CLASSIFIED ACCORDING TO ENVIRONMENT

	Number			Average annual rate per 100,000 general population		
	Males	Females	Total	Males	Females	Total
New York State .....	14,750	12,104	26,854	78.2±0.8	64.6±0.7	71.4±0.5
Rural .....	1,683	1,370	3,053	52.7±1.5	46.0±1.5	49.5±1.1
Urban .....	13,067	10,734	23,801	83.4±0.9	68.1±0.8	75.7±0.6
New York City .....	8,557	7,103	15,660	82.5±1.0	68.8±1.0	75.7±0.7
Buffalo .....	648	514	1,162	76.1±3.5	59.5±3.1	67.8±2.3
Rochester .....	399	380	779	82.2±4.9	75.7±4.5	79.3±3.3
Syracuse .....	280	208	488	90.4±6.3	65.9±5.3	78.1±4.1
Cities having a population of						
100,000-200,000.....	451	433	884	84.8±4.7	78.0±4.4	81.3±3.2
25,000-100,000.....	1,010	816	1,826	85.6±3.2	67.3±2.8	76.4±2.1
10,000-25,000.....	821	670	1,491	76.0±3.1	60.9±2.8	68.4±2.1
2,500-10,000.....	688	548	1,236	80.3±3.6	61.1±3.1	70.5±2.3

Among males the maximum rate, 90.4, occurred in Syracuse. Cities with a population of 100,000 to 200,000, and 25,000 to 100,000 followed with rates of 84.8 and 85.6, respectively. Exclusive of the rural rate, the lowest rates occurred in cities with a population of 10,000 to 25,000 and in Buffalo. The female rates are of a lower order. The maximum, 78.0, occurred in cities with a population of 100,000 to 200,000, followed by a rate of 75.7 in Rochester. The female population of Buffalo had the surprisingly low rate of 59.5, only the rural rate being lower.

In general the preceding rates are in excess of those recorded by Pollock and Nolan for 1915-1920. One marked exception may be noted. In cities with a population of 2,500 to 10,000 there was an average annual rate of 76.7 in 1915-1920, compared with a rate of 70.5 in 1930. Syracuse, on the other hand, showed an unusual increase during the interval from a rate of 59.7 to 78.1.<sup>7</sup> Many of the differences in crude rates, however, are due partly to age variations in the several population groups. Comparing the latter on the basis of the distribution of the general population of New York State aged 15 years and over, as shown by the Federal census of April 1, 1930, we obtain the standardized rates of first admissions, shown in Table 15.

The standardized rate for the entire State was 94.7 per 100,000 population aged 15 years and over. The rates rose from a minimum of 61.6 among the rural population to a maximum of 106.6 in cities with a population of 100,000 to 200,000. New York City had the second highest rate, 105.4, followed by Syracuse with 101.0. Of the larger units of population, Buffalo had the lowest rate, 92.8, this resulting from very low rates of senile and manic-depressive psychoses. It is apparent, however, that in general, the rates of the higher population aggregates exceed those in the smaller units (population under 100,000), and that the latter in turn are in significant excess over the rural rate.

Among the males the maximum standardized rate, 118.7, occurred in Syracuse. New York followed with a rate of 114.8. Cities with populations of 100,000 to 200,000, and 25,000 to 100,000, followed with rates of 113.3 and 111.8, respectively. Buffalo was relatively low with a rate of 104.4. None of the differences can be considered significant, however, in view of the large probable errors. Among females the maximum rate of first admissions, 98.5, occurred in cities with a population of 100,000 to 200,000, followed by a rate of 94.2 in New York City. Beginning with a minimum rate of 58.3 among the rural population, there is a steady increase in the rate to a maximum in cities with a population of 100,000 to 200,000. In the larger cities the standardized rates fluctuate, but in general they exceed the rate in the smaller areas of population.

In the following sections we shall consider environmental differences among the more important groups of psychoses.

#### SENILE PSYCHOSES

There were 2,392 first admissions with senile psychoses during the three years ended June 30, 1931, giving an average annual rate of 6.4 per 100,000 population. The rural and urban populations each had a rate of 6.4; but urban males had a lower rate than rural males, the latter being in excess in the ratio of 1.3 to 1. This order was reversed among females, however, the urban rate being in excess in the ratio of 1.2 to 1.

The urban rates fluctuate irregularly in the cities with populations of 200,000 and under, but they are all in excess of the rural

rate. Rochester had the highest rate. New York, Buffalo, and Syracuse, however, each had lower rates than the rural population, Buffalo showing a minimum of 4.6.

For the period of 1915 to 1920 Pollock and Nolan<sup>7</sup> reported an average annual rate of 6.0 in New York City, which may be compared with a rate of 5.3 in 1930. Buffalo showed a slight decrease from 5.1 to 4.6. Rochester, however, showed an increase, the rates being 7.1 and 11.2 for 1915-1920 and 1930, respectively. Syracuse showed an increase from 3.0 to 5.6. The smaller urban communities showed increased rates. The rural rate, however, remained the same during the two periods.

TABLE 7. NUMBER OF FIRST ADMISSIONS WITH SENILE PSYCHOSES TO THE NEW YORK CIVIL STATE HOSPITALS DURING THE THREE YEARS ENDED JUNE 30, 1931, AND AVERAGE ANNUAL RATE PER 100,000 GENERAL POPULATION, CLASSIFIED ACCORDING TO ENVIRONMENT

	Number			Average annual rate per 100,000 general population		
	Males	Females	Total	Males	Females	Total
New York State .....	994	1,398	2,392	5.3±0.2	7.4±0.2	6.4±0.2
Rural .....	209	185	394	6.5±0.5	6.2±0.5	6.4±0.4
Urban .....	785	1,213	1,998	5.0±0.2	7.7±0.3	6.4±0.2
New York City .....	404	694	1,098	3.9±0.2	6.7±0.3	5.3±0.2
Buffalo .....	29	50	79	3.4±0.7	5.8±1.0	4.6±0.6
Rochester .....	49	61	110	10.2±1.7	12.1±1.8	11.2±1.2
Syracuse .....	10	25	35	3.2±1.2	7.9±1.8	5.6±1.1
Cities having a population of						
100,000-200,000.....	38	76	114	7.1±1.4	13.7±1.8	10.5±1.1
25,000-100,000.....	88	120	208	7.5±0.9	9.9±1.1	8.7±0.7
10,000-25,000.....	74	88	162	6.9±0.9	8.0±1.0	7.4±0.7
2,500-10,000.....	89	96	185	10.4±1.3	10.7±1.3	10.6±0.9

The environmental differences based upon crude rates, are influenced however, by the varying proportions of old people in the several populations. Table 15 shows standardized rates of first admissions with senile psychoses, the standard being the population of the State of New York aged 45 years and over on April 1, 1930. The rural population had a standardized rate of 15.2 per 100,000 population, compared with an urban rate of 30.8, the latter being in excess in the ratio of 2.0 to 1. The rates increased in the smaller cities to a maximum of 41.6 in cities with a population of 100,000 to 200,000. The rates in Buffalo and Syracuse, though higher than the rural rate, were less than those of the smaller cities. Rochester

had the high rate of 40.5. There is no obvious reason why Syracuse and Buffalo should have such low rates of senile psychoses, whereas Rochester ranks so high.

Among males the standardized urban rate exceeded the rural rate in the ratio of 1.7 to 1, thus reversing the order of the crude rates. The lowest rate occurred in Syracuse, the maximum in Rochester. New York City and Buffalo had lower rates than the smaller urban aggregates. Among females the rates increased from a minimum of 13.6 in the rural population to a maximum of 45.5 in cities of 100,000 to 200,000 population. Of the larger cities Rochester had the maximum rate, 36.3, Buffalo, the minimum 22.5.

#### PSYCHOSES WITH CEREBRAL ARTERIOSCLEROSIS

During the three years ended June 30, 1931 there were 3,362 first admissions with cerebral arteriosclerosis among the urban population, of whom, 1,872 were males and 1,490 females. The average annual rate of first admissions was 10.7 per 100,000 population. Males and females had rates of 12.0 and 9.4, respectively. The rural population provided 448 such first admissions, of whom 271 were males and 177, females. The rural rate of first admissions was 7.3. The urban rate was therefore in excess in the ratio of 1.5 to 1. Males and females had corresponding ratios of 1.4 to 1 and 1.6 to 1, respectively.

TABLE 8. NUMBER OF FIRST ADMISSIONS WITH PSYCHOSES WITH CEREBRAL ARTERIOSCLEROSIS TO THE NEW YORK CIVIL STATE HOSPITALS DURING THE THREE YEARS ENDED JUNE 30, 1931, AND AVERAGE ANNUAL RATE PER 100,000 GENERAL POPULATION, CLASSIFIED ACCORDING TO ENVIRONMENT

	Number			Average annual rate per 100,000 general population		
	Males	Females	Total	Males	Females	Total
New York State .....	2,143	1,667	3,810	11.4±0.3	8.9±0.3	10.1±0.2
Rural .....	271	177	448	8.5±0.6	5.9±0.5	7.3±0.4
Urban .....	1,872	1,490	3,362	12.0±0.3	9.4±0.3	10.7±0.2
New York City .....	1,184	1,002	2,186	11.4±0.4	9.7±0.4	10.6±0.3
Buffalo .....	87	86	173	10.2±1.3	10.0±1.3	10.1±0.9
Rochester .....	83	70	153	17.3±2.2	13.9±1.9	15.6±1.5
Syracuse .....	37	15	52	12.0±2.3	4.8±1.4	8.3±1.3
Cities having a population of						
100,000-200,000.....	67	52	119	12.6±1.8	9.4±1.5	10.9±1.2
25,000-100,000.....	141	115	256	12.0±1.2	9.5±1.0	10.7±0.8
10,000- 25,000.....	135	87	222	12.5±1.3	7.9±1.0	10.2±0.8
2,500- 10,000.....	129	59	188	15.1±1.6	6.6±1.0	10.7±0.9



The minimum rate in the urban communities, 8.3, occurred in Syracuse, the maximum, 15.6, in Rochester. The remaining urban groups showed no significant differences. It may be noted that the rate among females in Syracuse was less than that in the rural environment.

There has been a remarkable increase in psychoses with cerebral arteriosclerosis in the past two decades. The rural rate, 3.5, as reported by Pollock and Nolan<sup>7</sup> for 1915-1920, had increased to 7.3 in 1930. But the urban rates showed even greater increases, especially in the large cities. New York City, for example, increased from a rate of 3.8 to 10.6; Buffalo from 3.9 to 10.1; Rochester from 5.1 to 15.6 and Syracuse from 2.5 to 8.3.

The environmental differences shown by crude rates are affected by the varying age constitutions. To remove the latter influence, we have standardized the rates for 1930, using as the standard, the population of New York State aged 45 years and over on April 1, 1930. The results are shown in Table 15.

Standardization resulted in an increase of the relative excess of the urban over the rural rate of first admissions with psychoses with cerebral arteriosclerosis. The urban rate was 49.1 per 100,000 population, compared with a rural rate of 19.4, the former being in excess in the ratio of 2.5 to 1. Among males and females the urban rates showed the same degree of excess over the rural rates, namely 2.5 to 1.

We now find an almost regular progression from a minimum rate of 19.4 in the rural population to 44.4 in cities with a population of 100,000 to 200,000. The rate then declined to 32.1 in Syracuse, a minimum in urban communities, but rose to a maximum of 58.0 in Rochester. The rate dropped to 44.6 in Buffalo, but rose to 55.0 in New York City, both rates exceeding those in the smaller population units (exclusive of Rochester). The male rates do not increase with the same degree of regularity. There was a minimum of 22.3 in the rural population. The rate rose rapidly in the smaller cities, reaching 53.5 in those with a population of 100,000 to 200,000. Syracuse and Buffalo had rates of 46.8 and 46.4, respectively. Rochester had a maximum of 66.1. New York City, with a rate of 61.1, was also well above the average. Among females the rate rose from a



minimum of 15.4 in the rural area to 32.9 in cities with a population of 100,000 to 200,000. The rate dropped very abruptly to 16.4 in Syracuse, but increased thereafter to rates well above the average for the State. New York City and Rochester had maxima with rates of 45.9 and 45.1, respectively. The differences cannot be considered significant, however, in view of the large probable errors.

### GENERAL PARALYSIS

There were 2,539 first admissions with general paralysis among the urban population during the three years ended June 30, 1931, of whom, 2,004 were males and 535 females. The average annual rate of first admissions was 8.1 per 100,000 population. Males and females had corresponding rates of 12.8 and 3.4, respectively. The rural population provided 186 first admissions with general paralysis, equivalent to an average annual rate of 3.0. The urban rate therefore exceeded the rural rate in the ratio of 2.7 to 1. The urban rate was in excess among males and females in the ratios of 3.0 to 1, and 2.1 to 1, respectively.

TABLE 9. NUMBER OF FIRST ADMISSIONS WITH GENERAL PARALYSIS TO THE NEW YORK CIVIL STATE HOSPITALS DURING THE THREE YEARS ENDED JUNE 30, 1931, AND AVERAGE ANNUAL RATE PER 100,000 GENERAL POPULATION CLASSIFIED ACCORDING TO ENVIRONMENT

	Number			Average annual rate per 100,000 general population		
	Males	Females	Total	Males	Females	Total
New York State .....	2,142	583	2,725	11.4±0.3	3.1±0.2	7.3±0.2
Rural .....	138	48	186	4.3±0.4	1.6±0.3	3.0±0.3
Urban .....	2,004	535	2,539	12.8±0.3	3.4±0.2	8.1±0.2
New York City .....	1,328	328	1,656	12.8±0.4	3.2±0.2	8.0±0.2
Buffalo .....	138	33	171	16.2±1.6	3.8±0.8	10.0±0.9
Rochester .....	67	11	78	14.0±2.0	2.2±0.8	7.9±1.0
Syracuse .....	53	22	75	17.1±2.7	7.0±1.7	12.0±1.6
Cities having a population of						
100,000-200,000.....	74	30	104	13.9±1.9	5.4±1.2	9.6±1.1
25,000-100,000.....	137	51	188	11.6±1.2	4.2±0.7	7.9±0.7
10,000- 25,000.....	98	32	130	9.1±1.1	2.9±0.6	6.0±0.6
2,500- 10,000.....	76	22	98	8.9±1.2	2.5±0.6	5.6±0.7

Rates of first admission with general paralysis increased from a minimum of 3.0 among the rural population to 9.6 in cities with a population of 100,000 to 200,000. The rate grew to a maximum of

12.0 in Syracuse, but fluctuated about a lower level in the larger cities. Compared to the larger urban centers, New York City had the relatively low rate of 8.0. In general, males and females show similar trends, the latter being about a much lower level. Females have an unusually low rate in Rochester, but in Syracuse they have a rate more than twice that for the State as a whole.

General paralysis decreased in New York City, Buffalo and Rochester between 1915-1920, and 1930. The smaller cities, however, showed increased rates.<sup>7</sup>

To remove the differences in crude rates, inherent in age selection, those for 1930 have been standardized on the basis of the population of New York State aged 15 years and over on April 1, 1930. (See Table 15.)

As general paralysis is less prevalent in the older age groups, the rural population is favorably affected thereby. As a result of standardization, we obtain rates of 10.8 and 4.1 per 100,000 population, for the urban and rural populations, respectively, a ratio of 2.6 to 1. Though reduced slightly, the urban rate is still overwhelmingly in excess. Based upon standardized rates the urban male population exceeded the rural population in the prevalence of general paralysis in the ratio of 2.9 to 1. It is noteworthy that the female ratio is less than that of the males.

It may be noted that the general trends are not changed by standardization. There was a steady increase from a minimum of 4.1 in the rural population to a maximum of 15.5 in Syracuse. The rate dropped markedly to 9.5 in Rochester, a consequence of the low rate among females in this city. Buffalo had a relatively high rate of 13.3. New York City had a rate of 10.7, less than that of any of the larger cities, exclusive of Rochester.

Among males the rate rose steadily from a minimum of 5.9 in the rural population to 22.2 in Syracuse. The rates fluctuated in the larger cities, but were above the average for the State. Among females the rates rose from 2.3 in the rural areas to 9.2 in Syracuse. The rates decreased in the larger cities. Exclusive of the rural population, Rochester had the lowest rate among females in the State.

Differences in rates of general paralysis are primarily a conse-

quence of variations in the incidence of syphilis, and the latter is higher in urban than in rural communities. There is also some evidence that syphilis is relatively more prevalent in the larger cities. This, therefore, would account for the fact that general paralysis is least prevalent in the rural population, moderately prevalent in the smaller cities, and most prevalent in the larger cities. Rochester constitutes an outstanding exception to this hierarchy, resulting from an apparently low incidence of syphilis among the females of this city.

#### ALCOHOLIC PSYCHOSES

There were 1,513 first admissions with alcoholic psychoses in the three years ended June 30, 1931 among the urban population, of whom 1,256 were males and 257 females. The average annual rate of first admissions was 4.8 per 100,000 population. Males and females had rates of 8.0 and 1.6, respectively. Among the rural population there were 150 such first admissions, of whom 135 were males and 15 females. The average annual rate of first admissions was 2.4, the urban rate being in excess in the ratio of 2.0 to 1. Among males and females the urban rates were in excess in the ratios of 1.9 to 1 and 3.2 to 1, respectively.

TABLE 10. NUMBER OF FIRST ADMISSIONS WITH ALCOHOLIC PSYCHOSES TO THE NEW YORK CIVIL STATE HOSPITALS DURING THE THREE YEARS ENDED JUNE 30, 1931, AND AVERAGE ANNUAL RATE PER 100,000 GENERAL POPULATION, CLASSIFIED ACCORDING TO ENVIRONMENT

	Number			Average annual rate per 100,000 general population		
	Males	Females	Total	Males	Females	Total
New York State.....	1,361	272	1,663	7.4±0.2	1.4±0.1	4.4±0.1
Rural .....	135	15	150	4.2±0.4	0.5±0.2	2.4±0.2
Urban .....	1,256	257	1,513	8.0±0.3	1.6±0.1	4.8±0.1
New York City .....	782	185	967	7.5±0.3	1.8±0.2	4.7±0.2
Buffalo .....	74	21	95	8.7±1.2	2.4±0.6	5.5±0.7
Rochester .....	35	5	40	7.3±1.4	1.0±0.5	4.1±0.8
Syracuse .....	38	2	40	12.3±2.3	0.6±0.5	6.4±1.2
Cities having a population of						
100,000-200,000.....	36	13	49	6.8±1.3	2.3±0.8	4.5±0.8
25,000-100,000.....	108	15	123	9.2±1.0	1.2±0.4	5.1±0.5
10,000-25,000.....	93	12	105	8.6±1.0	1.1±0.4	4.8±0.5
2,500-10,000.....	70	4	74	8.2±1.1	0.4±0.3	4.2±0.6

The rates rose from a minimum of 2.4 in rural communities to 5.1 in cities of 25,000 to 100,000 population. A decline to a rate of 4.5 in cities of 100,000 to 200,000 was followed by a rise to a maximum of 6.4 in Syracuse. The rates declined thereafter, though with the exception of Rochester they were above the general average for the State. The relatively low rate in New York City is noteworthy.

Among males the rates rose from a minimum of 4.2 in the rural area to 9.2 in cities of 25,000 to 100,000 population; decreased to 6.8, and then rose to a maximum of 12.3 in Syracuse. The rates decreased thereafter, being generally lower than those in the smaller cities. The trend among females is of little reliability, many of the individual rates having no significance in relation to their probable errors.

The rise in the incidence of the alcoholic psychoses is significant. In New York City the rate of first admissions with such psychoses rose from 3.6 in 1915-1920 to 4.7 in 1930. In Buffalo the corresponding rates were 4.1 and 5.5. Rochester and Syracuse had rates of 2.2 and 3.7, respectively, in 1915-1920, compared with 4.1 and 6.4 in 1930.<sup>7</sup>

As usual, a more accurate picture of environmental differences is afforded by standardized rates of first admission. These were obtained by using as standard, the population of the State of New York aged 20 years and over on April 1, 1930. (See Table 15.)

Standardization caused but a slight reduction in the relative orders of the first admission rates with alcoholic psychoses. Among males the standardized rates were 12.2 and 6.6 per 100,000 population for the urban and rural populations, respectively, a ratio of 1.8 to 1. The corresponding ratio among females was 3.1 to 1. For both sexes combined, the urban standardized rate was in excess in the ratio of 2.0 to 1. A significant result is the relatively greater excess of the urban female rate over that of the rural female, as compared with the corresponding ratio among males.

The rates increased from a minimum of 3.7 in the rural population to 7.8 in cities with a population of 25,000 to 100,000. After a decrease to 6.7, the rate rose to a maximum of 9.2 in Syracuse. The rates declined thereafter, that of Rochester being markedly low.

Buffalo had a rate of 8.6, which exceeded that of any other city except Syracuse. Compared with most cities of the State, New York City had a low rate.

The preceding trend is typical of that among males. The rate rose from a minimum of 6.6 in the rural population to 17.4 in Syracuse. Rochester had one of the lowest rates among the cities of the State. Compared to the other cities of the State, New York City also had a relatively low rate. Rates of first admissions with alcoholic psychoses are low among females, but it is well to note the relatively high rates in Buffalo and in cities with a population of 100,000 to 200,000.

#### MANIC-DEPRESSIVE PSYCHOSES

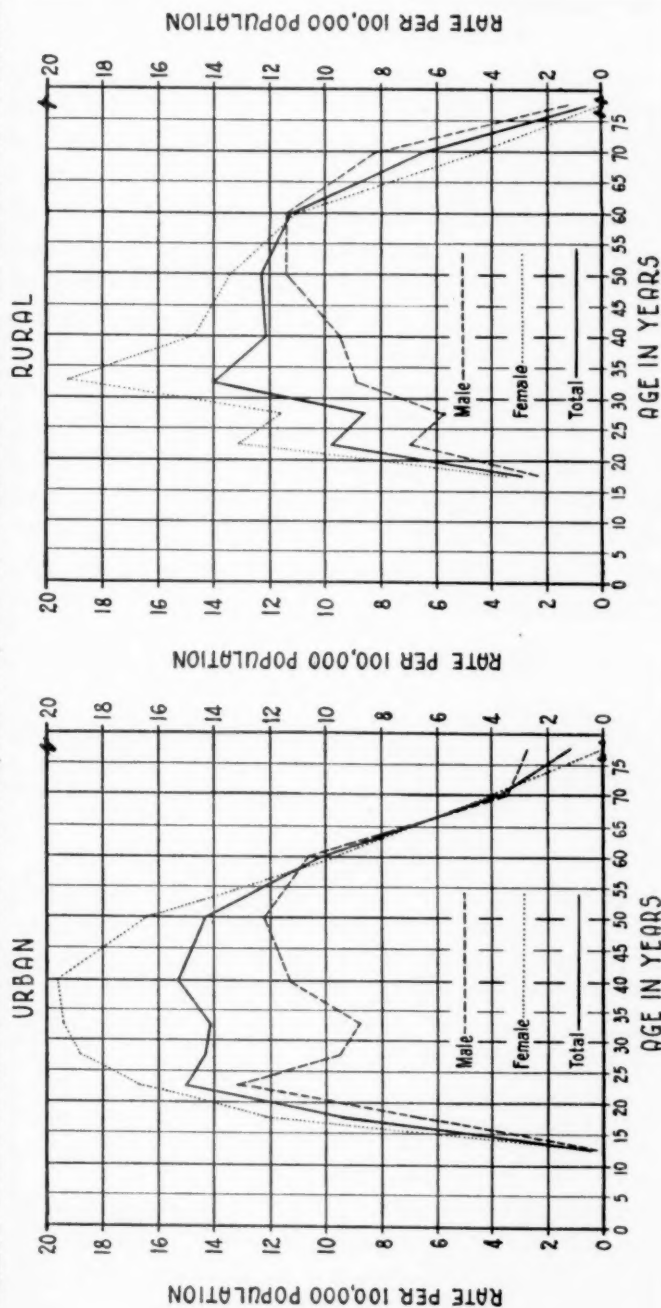
The urban population furnished 3,069 first admissions with manic-depressive psychoses during the three years ended June 30, 1931, of whom, 1,188 were males and 1,881, females. The average annual rate of first admissions was 9.8. Males and females had average annual rates of 7.6 and 11.9, respectively. Among the rural population there were 436 first admissions, of whom 191 were males and 245, females. The average annual rate was 7.1; the urban rate was in excess in the ratio of 1.4 to 1. Male and female urban rates were in excess in the ratios of 1.3 to 1 and 1.5 to 1, respectively.

Rates of first admission are shown by age groups in Table 11 and are illustrated in Graph 2.

TABLE 11. AVERAGE ANNUAL RATES OF FIRST ADMISSIONS WITH MANIC-DEPRESSIVE PSYCHOSES TO THE NEW YORK CIVIL STATE HOSPITALS BY AGE GROUPS, AMONG URBAN AND RURAL POPULATIONS, 1929 TO 1931, WITH RATIOS OF CORRESPONDING RATES

Age (years)	Average annual urban rates of first admissions			Average annual rural rates of first admissions			Ratio of urban to rural rates		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
10-14 .....	0.2	0.4	0.3	..	..	..	..	..	..
15-19 .....	6.6	12.1	9.4	2.3	3.4	2.8	2.9	3.6	3.4
20-24 .....	13.2	16.7	15.0	6.9	13.1	9.8	1.9	1.3	1.5
25-29 .....	9.5	18.8	14.3	5.7	11.6	8.6	1.7	1.6	1.7
30-34 .....	8.8	19.4	14.1	8.8	19.2	14.0	1.0	1.0	1.0
35-44 .....	11.3	19.6	15.3	9.5	14.7	12.1	1.2	1.3	1.3
45-54 .....	12.2	16.4	14.3	11.4	13.4	12.3	1.1	1.2	1.2
55-64 .....	10.6	9.6	10.1	11.4	11.2	11.3	0.9	0.9	0.9
65-74 .....	3.4	4.0	3.7	8.1	4.5	6.4	0.4	0.9	0.6
75 and over..	2.7	..	1.1	1.2	..	0.6	2.3	..	1.8
All ages .....	7.6	11.9	9.8	6.0	8.2	7.1	1.3	1.5	1.4

GRAPH 2 - AVERAGE ANNUAL NUMBER OF URBAN AND RURAL FIRST ADMISSIONS WITH MANIC-DEPRESSIVE PSYCHOSES TO THE NEW YORK CIVIL STATE HOSPITALS DURING THE FISCAL YEARS 1929 TO 1931, PER 100,000 OF CORRESPONDING GENERAL POPULATION





The general picture is that of a rising rate from adolescence to maturity and a decline after the interval of 35 to 44 years. This is more evident among females, who, because of the greater incidence of such diseases among them, present a smoother trend. In the urban areas, the female rates rose to a maximum of 19.6 per 100,000 population at 35 to 44 years. In the rural areas there was a maximum rate of 19.2 at 30 to 34 years. Comparing the urban and rural rates, it may be noted that the former are in excess through the interval 45 to 54 years. On the whole, the excess of the urban ratio decreases with advancing age, until there is a rural excess at 55 to 74 years.

The average annual rate of first admissions with manic-depressive psychoses fluctuated between a minimum of 5.8 in Buffalo and 10.6 in cities with a population of 100,000 to 200,000. New York City followed closely with a rate of 10.4. It is important, however, to note the low rates in three of the four principal cities in the State. These have lower rates than the smaller cities, and two, Buffalo and Rochester, have lower rates than the rural areas.

TABLE 12. NUMBER OF FIRST ADMISSIONS WITH MANIC-DEPRESSIVE PSYCHOSES TO THE NEW YORK CIVIL STATE HOSPITALS DURING THE THREE YEARS ENDED JUNE 30, 1931, AND AVERAGE ANNUAL RATE PER 100,000 GENERAL POPULATION, CLASSIFIED ACCORDING TO ENVIRONMENT

	Number			Average annual rate per 100,000 general population		
	Males	Females	Total	Males	Females	Total
New York State.....	1,379	2,126	3,505	7.3±0.2	11.3±0.3	9.3±0.2
Rural .....	191	245	436	6.0±0.5	8.2±0.6	7.1±0.4
Urban .....	1,188	1,881	3,069	7.6±0.3	11.9±0.3	9.8±0.2
New York City .....	791	1,356	2,147	7.6±0.3	13.1±0.4	10.4±0.3
Buffalo .....	41	58	99	4.8±0.9	6.7±1.0	5.8±0.7
Rochester .....	23	42	65	4.8±1.2	8.4±1.5	6.6±0.9
Syracuse .....	24	31	55	7.8±1.9	9.8±2.0	8.8±1.4
Cities having a population of						
100,000-200,000.....	49	66	115	9.2±1.5	11.9±1.7	10.6±1.2
25,000-100,000.....	91	121	212	7.7±0.9	10.0±1.1	8.9±0.7
10,000-25,000.....	77	105	182	7.1±0.9	9.6±1.1	8.4±0.7
2,500-10,000.....	74	92	166	8.6±1.2	10.3±1.3	9.5±0.9

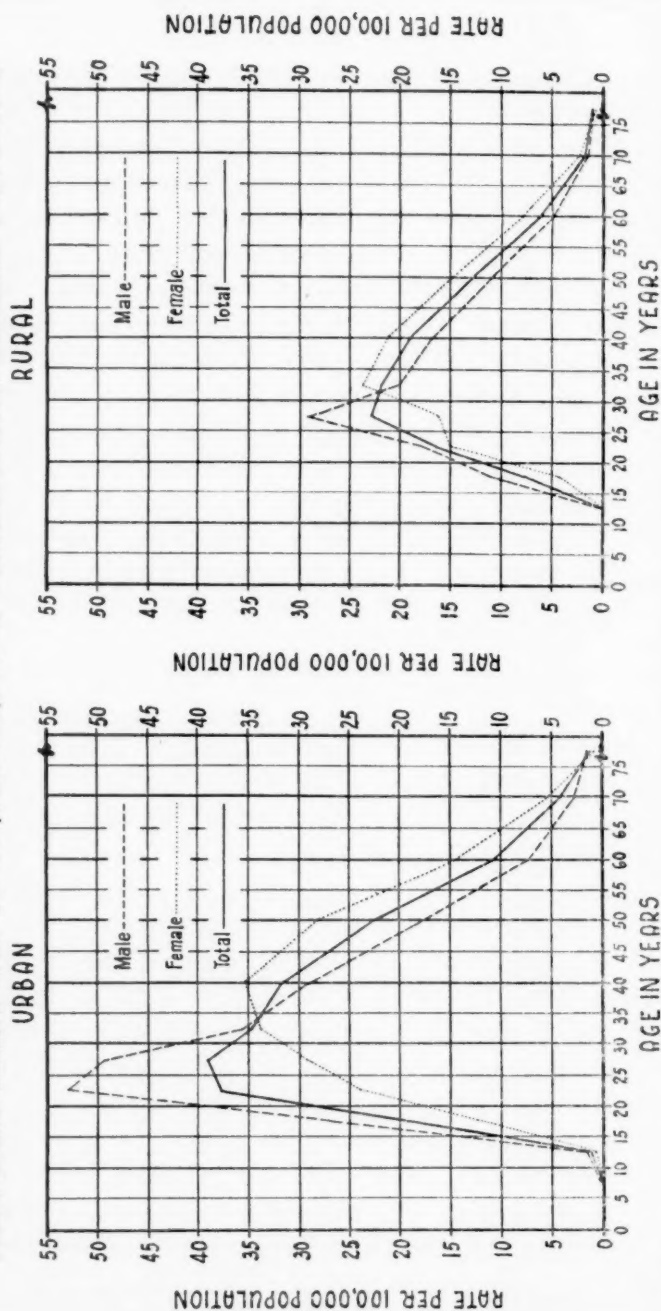
The average annual rate of first admissions with manic-depressive psychoses in New York City was 10.7 in 1915-1920, a rate practically identical with that for 1930. In Buffalo the rate decreased

from 7.9 to 5.8. In Rochester, however, the rate increased from 3.7 to 6.6. In Syracuse the rate declined from 9.2 to 8.8. Cities with populations of 2,500 to 200,000 showed increased rates during the interval.<sup>7</sup>

Because of the effect of age differences upon the rates of first admission, it is necessary to consider the standardized rates, which are shown in Table 15. The standard population was that of the State of New York, aged 15 years and over on April 1, 1930. The standardized rate for the entire State was 12.4. The age distribution of the rural population tends to react favorably upon its first admission rate with manic-depressive psychoses, as compared with the urban population. On the basis of the crude rates, the urban rate was in excess in the ratio of 1.4 to 1. Standardization reduced the excess. Thus urban and rural rates became 12.8 and 10.0 per 100,000 population, respectively, a ratio of 1.3 to 1. The minimum rate, 7.8, occurred in Buffalo. Rochester followed with a rate of 8.3. The rural rate, 10.0, was the third lowest. The maximum rate, 14.1, occurred in cities with a population of 100,000 to 200,000. New York City followed with a rate of 13.3. In general, the rates were highest in the cities of medium size, and lowest in Buffalo and Rochester. The rural rate occupied a position about midway between the maximum and minimum rates. The low rate in Buffalo probably results from the presence of a large Polish population, among whom there is a relatively low incidence of manic-depressive psychoses.<sup>8</sup>

Among males the rate increased from 8.1 in the rural areas to 12.5 in cities of 100,000 to 200,000 population. The rate then decreased to a minimum of 5.9 in Rochester. The rate increased thereafter to 6.6 in Buffalo and 9.9 in New York City. Among females there was a rate of 12.1 in the rural areas. The rate was fairly constant in the smaller cities, but advanced to 15.9 in cities with a population of 100,000 to 200,000. The rate declined thereafter to a minimum of 9.2 in Buffalo. New York City, however, had the maximum rate of 16.9. This rate was probably influenced by the high percentages of foreign white females and negro females in the city, these two groups having the highest rates of manic-depressive psychoses.<sup>8</sup>

GRAPH 3 - AVERAGE ANNUAL NUMBER OF URBAN AND RURAL FIRST ADMISSIONS WITH DEMENTIA PRAECOX TO THE NEW YORK CIVIL STATE HOSPITALS DURING THE FISCAL YEARS 1929 TO 1931, PER 100,000 OF CORRESPONDING GENERAL POPULATION



## DEMENTIA PRÆCOX

There were 6,529 first admissions with dementia præcox from urban areas in the three years ended June 30, 1931, of whom 3,514 were males and 3,015, females. The average annual rate of first admissions per 100,000 population was 20.8, males and females having corresponding rates of 22.4 and 19.1, respectively. The rural area provided 603 first admissions with dementia præcox, of whom 314 were males and 289, females. The average annual rate of first admissions was 9.8. The urban rate was in excess in the ratio of 2.1 to 1. Urban males and females had rates in excess of those of rural males and females in the ratios of 2.3 to 1 and 2.0 to 1, respectively.

Rates of first admissions are shown by age groups in Table 13 and are illustrated in Graph 3.

TABLE 13. AVERAGE ANNUAL RATES OF FIRST ADMISSIONS WITH DEMENTIA PRÆCOX TO THE NEW YORK CIVIL STATE HOSPITALS BY AGE GROUPS, AMONG URBAN AND RURAL POPULATIONS, 1929 TO 1931, WITH RATIOS OF CORRESPONDING RATES

Age (years)	Average annual urban rates of first admissions			Average annual rural rates of first admissions			Ratio of urban to rural rates		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
5-9 .....	0.1	..	..	..	..	..	..	..	..
10-14 .....	1.4	0.8	1.1	..	..	..	..	..	..
15-19 .....	26.9	12.3	19.4	11.3	4.2	7.9	2.4	2.9	2.5
20-24 .....	53.1	23.8	37.8	17.8	15.0	16.5	3.0	1.6	2.3
25-29 .....	49.4	29.2	39.1	29.1	16.1	22.8	1.7	1.8	1.7
30-34 .....	35.7	33.9	34.8	20.0	23.6	21.8	1.8	1.4	1.6
35-44 .....	29.0	35.3	32.0	16.9	21.2	18.9	1.7	1.7	1.7
45-54 .....	17.7	28.0	22.7	10.9	14.8	12.7	1.6	1.9	1.8
55-64 .....	7.2	14.6	10.9	5.0	7.8	6.3	1.4	1.9	1.8
65-74 .....	2.6	5.4	4.1	2.0	2.2	2.1	1.3	2.5	2.0
75 and over ..	1.3	1.0	1.1	1.2	1.1	1.2	1.1	0.9	0.9
All ages .....	22.4	19.1	20.8	9.8	9.7	9.8	2.3	2.0	2.1

In the urban population the rate rose to a maximum of 39.1 per 100,000 population at 25 to 29 years, and declined steadily thereafter. Among males the rate rose rapidly to an early maximum of 53.1 at 20 to 24 years. Among females the rates advanced more slowly, reaching a maximum of 35.3 at 35 to 44 years. The rural population shows similar trends, though at much lower levels. This is shown in Table 13, where the ratios of urban to rural rates indi-

cate the former to be greatly in excess in each interval, except at 75 years and over. In this interval, however, the rates cannot be considered significant. Among males the ratio of urban to rural rates appear to decrease with age. Among females the ratio decreases through the interval 30 to 34 years, but increases thereafter.

The average annual rate of first admissions with dementia præcox was 19.0, with a minimum of 9.8 in rural areas and a maximum of 22.6 in New York City. In general, the rates varied directly with size of population. This is especially evident among males, the rates increasing from a minimum of 9.8 in the rural population, to 17.7 in cities of 100,000 to 200,000 population, and continuing to reach higher rates in Syracuse, Rochester and Buffalo to a maximum of 24.4 in New York City. Among females the trend was less regular, but in general there was an increase in rate with growth in population.

The rate of first admissions with dementia præcox has increased since 1915-1920.\* In New York City the rate increased from 21.0 to 22.6. Buffalo showed a similar increase. Syracuse showed the most marked change, the rate increasing from 10.7 to 16.5. Rochester, however, decreased from a rate of 23.4 to 21.3. The smaller cities showed generally increased rates, except in the group with a population of 2,500 to 10,000, where the rate decreased from 17.1 to 14.1.

TABLE 14. NUMBER OF FIRST ADMISSIONS WITH DEMENTIA PRÆCOX TO THE NEW YORK CIVIL STATE HOSPITALS DURING THE THREE YEARS ENDED JUNE 30, 1931, AND AVERAGE ANNUAL RATE PER 100,000 GENERAL POPULATION, CLASSIFIED ACCORDING TO ENVIRONMENT

	Number			Average annual rate per 100,000 general population		
	Males	Females	Total	Males	Females	Total
New York State .....	3,828	3,304	7,132	20.3±0.4	17.6±0.4	19.0±0.3
Rural .....	314	289	603	9.8±0.6	9.7±0.7	9.8±0.5
Urban .....	3,514	3,015	6,529	22.4±0.4	19.1±0.4	20.8±0.3
New York City .....	2,534	2,145	4,679	24.4±0.6	20.8±0.5	22.6±0.4
Buffalo .....	166	148	314	19.5±1.8	17.1±1.6	18.3±1.2
Rochester .....	95	114	209	19.8±2.4	22.7±2.5	21.3±1.7
Syracuse .....	60	43	103	19.4±2.9	13.6±2.4	16.5±1.9
Cities having a population of						
100,000-200,000 .....	94	88	182	17.7±2.1	15.8±2.0	16.7±1.4
25,000-100,000 .....	207	171	378	17.5±1.4	14.1±1.3	15.8±0.9
10,000-25,000 .....	157	151	308	14.5±1.4	13.7±1.3	14.1±0.9
2,500-10,000 .....	117	131	248	13.7±1.5	14.6±1.5	14.1±1.1

TABLE 15. AVERAGE ANNUAL STANDARDIZED RATES OF FIRST ADMISSION TO THE NEW YORK CIVIL STATE HOSPITALS DURING THE THREE YEARS ENDED JUNE 30, 1931, CLASSIFIED ACCORDING TO ENVIRONMENT

	All psychoses*		Senile†		Cerebral arteriosclerosis†		General paralysis*		Alcoholic‡		Manic-depressive*		Dementia præcox*								
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females							
New York State .....	104.0	84.3	94.7	22.1	26.7	26.5	47.3	34.0	41.6	15.2	4.3	9.6	11.1	1.9	6.7	9.8	15.2	12.4	27.1	23.1	25.2
Rural .....	64.7	58.3	61.6	14.8	13.6	15.2	22.3	15.4	19.4	5.9	2.3	4.1	6.6	0.8	3.7	8.1	12.1	10.0	15.1	14.7	14.8
Urban .....	113.7	90.3	102.7	25.3	31.3	30.8	56.6	39.0	49.1	17.1	4.6	10.8	12.2	2.5	7.3	10.0	15.7	12.8	29.1	25.3	27.0
New York City .....	114.8	94.2	105.4	23.9	33.8	31.5	61.1	45.9	55.0	17.2	4.4	10.7	11.6	2.8	7.2	9.9	16.9	13.3	30.7	27.0	28.7
Buffalo .....	104.4	80.2	92.8	16.0	22.5	21.0	46.4	40.0	44.6	21.4	5.3	13.3	13.4	3.8	8.6	6.6	9.2	7.8	26.1	23.5	24.7
Rochester .....	106.0	91.3	99.9	38.3	36.3	40.5	66.1	45.1	58.0	16.1	2.9	9.5	10.5	1.4	5.9	5.9	11.3	8.3	27.1	30.5	28.6
Syracuse .....	118.7	83.3	101.0	12.7	24.4	20.7	46.8	16.4	32.1	22.2	9.2	15.5	17.4	1.0	9.2	10.4	13.5	11.7	26.6	18.4	22.4
Cities having a population of																					
100,000-200,000 .....	113.3	98.5	106.6	31.3	45.5	41.6	53.5	32.9	44.4	18.2	7.2	12.6	10.0	3.5	5.7	12.5	15.9	14.1	24.2	21.3	22.6
25,000-100,000 .....	111.8	83.6	98.2	28.7	29.7	31.4	46.3	30.6	39.6	15.3	5.8	10.5	13.8	1.8	7.8	10.3	13.3	11.7	23.8	19.2	21.3
10,000-25,000 .....	97.9	76.8	87.7	24.1	21.7	24.8	45.6	25.2	36.1	12.2	4.1	8.0	13.0	1.8	7.3	9.5	13.3	11.3	20.5	19.2	19.7
2,500-10,000 .....	100.2	74.1	87.6	31.8	26.4	31.2	47.7	18.6	33.9	11.5	3.5	7.4	12.4	0.7	6.5	11.8	13.8	12.7	20.1	20.5	20.1

\*Population of New York State aged 15 years and over on April 1, 1930, taken as standard.

†Population of New York State aged 45 years and over on April 1, 1930, taken as standard.

‡Population of New York State aged 20 years and over on April 1, 1930, taken as standard.



Standardized rates of first admissions with dementia præcox are shown in Table 15. The population of the State of New York aged 15 years and over on April 1, 1930 was employed as the standard.

On the basis of crude rates of first admission the urban population exceeded the rural in the incidence of dementia præcox in the ratio of 2.1 to 1. Dementia præcox, however, being characteristic of the younger age groups, a selection from the latter would affect the rural rate favorably. When standardized, the rates per 100,000 population became 27.0 and 14.8 for the urban and rural populations, respectively. The former is still greatly in excess, though the ratio is reduced to 1.8 to 1.

There was, generally, an upward trend with advancing size of population, the rate reaching 22.6 in cities of 100,000 to 200,000 population. The trend continued upward in the larger cities, there being maximum rates of 28.7 in New York City and 28.6 in Rochester.

The general upward trend was very apparent among males, among whom there was a minimum rate of 15.1 in rural areas. The rate increased progressively to 27.1 in Rochester, decreased to 26.1 in Buffalo, but rose to a maximum of 30.7 in New York City. Among females there was a less regular trend, but the order of differences is clear. There was a minimum rate of 14.7 in the rural population, and a rise in the smaller cities to a rate of 21.3 in those with a population of 100,000 to 200,000. The rate dropped to 18.4 in Syracuse, but reached a maximum of 30.5 in Rochester. New York City and Buffalo had the second and third highest rates, respectively.

The higher rates of dementia præcox in the larger cities may be attributed in large part to the presence of relatively more foreign-born, among whom there appear to be maximum rates of dementia præcox.<sup>10</sup>

#### SUMMARY

1. There is a lower incidence of mental disease among the rural population than among the urban population. There also appears to be, on the whole, a steady progression in the relative incidence of mental disease with increasing size of population. This is clearly apparent as the population grows from the smallest units (rural) to communities of 100,000 to 200,000. The rates of first

admission fluctuate widely in the largest cities of the State of New York, though they are almost always well in excess of the rural rates. Variations in environmental rates of mental disease are, on the whole, independent of age differences in the several populations. A partial explanation of the variation undoubtedly resides in the greater ease with which certain types of mental patients may be cared for at home in the rural sections and in some of the smaller cities. A further explanation may be found in differences in the proportions of the several nativity and racial groups throughout the State. But this cannot be a decisive factor, for the rates of first admission are lower among the foreign-born in a rural environment, than among those in urban communities, showing that influences other than nativity or race are at work.<sup>8, 10</sup> The statistical data at present available are not sufficient to enable us to test all the consequences of differential demographic groupings throughout the State, but it seems likely that such differences are associated with social and economic phenomena which are in turn related to the incidence of mental disease. Of more direct significance is the greater prevalence of alcoholic and syphilitic disorders in urban centers. In view of the correlation between the rate of first admissions and the size of population it may be interesting to speculate upon the possible effects of the newer trends in population development on the future incidence of mental disease.

2. On the basis of crude rates, urban and rural populations had equivalent rates of first admission with senile psychoses. When standardized, however, the urban rate was in excess in the ratio of 2.0 to 1. The rates increased to a maximum in cities of 100,000 to 200,000 population. Buffalo and Syracuse had lower rates than the other urban communities. In general the larger cities had lower rates than the smaller cities. In Syracuse, males had a rate lower than that of the rural population.

3. The urban rate of first admissions with psychoses with cerebral arteriosclerosis exceeded the rural rate in the ratio of 2.5 to 1. The rate increased regularly through cities with a population of 100,000 to 200,000, but reached a minimum among urban communities in Syracuse. In this city the rate among females did not dif-

fer significantly from that of the rural population. The larger cities, New York, Buffalo, and Rochester, had the highest rates in the State.

4. The urban rate of first admissions with general paralysis exceeded the rural rate in the ratio of 2.6 to 1. This is the greatest excess found among the major psychoses. The urban male rate exceeded the rural rate in the ratio of 2.9 to 1, whereas among females the corresponding ratio was only 2.0 to 1. The rate increased with size of population to a maximum of 15.5 in Syracuse. Buffalo also had a relatively high rate. New York City, on the other hand, had a relatively low rate. Among the largest cities, Rochester had the lowest rate; the female population of this city not only had the lowest of the urban rates, but one that did not differ significantly from the rural rate.

5. On the basis of standardized rates of first admission, the urban rate for alcoholic psychoses exceeded the rural rate in the ratio of 2.0 to 1. Among males there was a ratio of 1.8 to 1, but among females this increased to the high ratio of 3.1 to 1. The rate increased from 3.7 among the rural population to 7.8 in cities of 25,000 to 100,000 population. Cities with 100,000 to 200,000 population had the lowest urban rate. The rate fluctuated irregularly in the larger cities, with a maximum of 9.2 in Syracuse. The rates were relatively low in New York City and Rochester.

6. The standardized rate of first admission with manic-depressive psychoses was higher among the urban population in the ratio of 1.3 to 1. The rates in Buffalo and Rochester, however, are less than the rural rate. New York City had the second highest rate, this resulting from the high rate among females in that city. Among males there is a definite tendency for the larger cities to have lower rates than the smaller cities.

7. The urban standardized rate of first admissions with dementia præcox exceeded the rural rate in the ratio of 1.8 to 1. The rates varied directly with population, being highest in the largest cities of the State. The tendency was clearest among the males, among whom the rates reached maxima in Buffalo and New York City.

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8. See, Prevalence of Manic-Depressive Psychoses in Relation to Sex, Age, Environment, Nativity and Race. By H. M. Pollock. In Research Publication No. XI of the Association for Research in Nervous and Mental Diseases. 1931.
9. Pollock and Nolan, *ibid*.
10. See, Frequency of Schizophrenia in Relation to Sex, Age, Environment, Nativity and Race. By H. M. Pollock. In Research Publication No. 4 of the Association for Research in Nervous and Mental Diseases. 1931.

## THE EFFECT OF INTERCURRENT SOMATIC DISEASE ON MANIC-DEPRESSIVE REACTIONS\*

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The ameliorative influence of certain intercurrent diseases upon a pre-existing mental disorder is a well-recognized clinical fact. Jacobi, Griesinger, Kraft-Ebing, Kraepelin, Lehman, Schüle and a great many other authors have reported improvement or actual recovery of morbid mental states following the development of intercurrent somatic illness. It is curious that the same toxins and infections that have a deleterious effect, precipitating or aggravating mental disease, may on occasion exert a beneficial influence on an existing psychosis. The majority of infectious diseases and a great many non-infectious disorders obtruding themselves in the course of a mental illness may favorably influence the outcome. Even influenza, notorious for its devastating effects on mental states, has occasionally been known to function as a curative agent. Latapie<sup>1</sup> and Menninger<sup>2</sup> have observed and reported a number of such instances.

In an interesting contribution Gordon<sup>3</sup> lists the following mental disturbances that may be improved by associated somatic disease: mental depression, hyperkinetic and expansive states of manic-depressive insanity; persecutory delusions of the paranoid type; delusive and hallucinatory states in cases of dementia præcox and senile dementia; agitated states of involutional melancholia; schizophrenic states; psychasthenic episodes; abnormal tendencies and abnormal psychic reactions, especially in psychopathic children; epileptoid states. Not only are acute psychoses favorably influenced, but long-standing mental conditions with a poor prognosis are occasionally improved.

The manic-depressive group of psychoses are especially amenable to recovery. Six cases are considered in this paper, five demonstrating the beneficial influence of associated somatic disease, and one illustrating recovery following a surgical operation.

\*Read at the interhospital conference held at the Psychiatric Institute and Hospital, April 19, 1933.

CASE 1. Mrs. M. D., age 48, white, housewife, admitted May 15, 1931. Six previous attacks and admissions, each attack being characterized by hyperkinetic and expansive states, auditory and visual hallucinations, each diagnosed manic-depressive, manic psychosis. For several years prior to her present admission she had been excitable, irritable and emotionally unstable, had spells of overactivity during which she was noisy, voluble, and slept very little at night. Her over-activity alternated with periods of profound depression during which she expressed threats of self-destruction. On admission she was violently overactive, overproductive and elated, so much so that it was impossible to get in contact with her. Physical and laboratory examinations revealed a toxic goitre and diabetes mellitus for which proper treatment was instituted. Hydrotherapy and sedative measures had little effect on her increased psychomotor activity. She was so extremely disturbed, mischievous and assaultive that it was necessary to confine her in the disturbed ward. On January 14, 1932, she developed an infection of her left foot with great swelling and redness and a fever that fluctuated between 101 and 105 degrees. A startling change was noted in her mental state during this febrile period. She became tractable, rational, and her ideational and motor overactivity lessened to the point where she was able to converse logically about her difficulties with a fair degree of insight. She made a complete mental recovery during her period of bed confinement and was discharged as recovered on February 29, 1932.

CASE 2. Miss H. M., age 25, single, white, dental assistant, admitted October 29, 1932, third attack, diagnosis manic-depressive, manic psychosis. First attack of depression with suicidal attempt at the age of 23. Second attack manic at 24, recovery following an attack of peritonsillar abscess. On admission she was disturbed, overactive, profane, and voluble in the expression of her capacities to do things other people found impossible. She was assaultive, unruly and in constant conflict with the other patients. While on the disturbed ward she developed an acute tonsillar attack which was complicated by a peritonsillar abscess and a moderate fever. With the onset of the complication she quieted down, became less voluble and could be transferred to a quiet ward. The peritonsillar abscess ruptured spontaneously and the patient made a complete recovery within two weeks.

CASE 3. Miss C. G., age 19, white, schoolgirl, admitted October 13, 1932, was in the manic phase of a manic-depressive psychosis, first attack. For six weeks following admission she was disturbed, irrational, uncooperative, quarrelsome and assaultive. She was extremely voluble and expansive, spoke about her latent talents, insisted that she was a goddess and a disciple of the highest morality. She demonstrated a flight of ideas with distractibility and hallucinated in both auditory and visual spheres. During the early part of December she developed a large carbuncle over the right shoulder blade and ran a moderately high fever for several days. She complained of excruciating pain and was confined in bed for about two weeks. A great change in her mental condition was apparent during the second day of her fever. She spoke rationally and became sufficiently cooperative to allow her transfer to a quiet ward. Within a week she had regained her emotional stability and she appeared to have some insight into her psychosis and previous hallucinatory experiences. One month following her illness she was discharged recovered.

CASE 4. Mrs. R. W., age 36, white, housewife, admitted November 30, 1932, diagnosis manic-depressive, depressed psychosis. Three previous depressed attacks since 1929 with recovery. One month previous to admission the patient lost interest in herself and in her



family, became depressed, retarded, and expressed indefinite suicidal ideas. Her behavior in the hospital was characterized by a hopeless attitude, feelings of inadequacy, psychomotor retardation, emotional depression, and various hypochondriacal complaints. On several occasions she refused to eat. On December 14, 1932, she was operated under ether anesthesia and an amputation of the cervix and repair of the anterior vaginal wall accomplished. Immediately following the operation the patient seemed to take a new interest in life; she became alert, spontaneous and moderately cheerful. She recovered completely from her mental illness during the convalescent period of her operation and in a short time was discharged from the hospital.

CASE 5. Mrs. A. S., age 32, white, housewife, was admitted on December 9, 1932, in a delirious mania. No previous attacks. On admission she was extremely excited, noisy, boisterous and resistive to all the ward routines. Her talk was incoherent with a tendency to flight of ideas; she was distractible, erotic, disoriented and indulged in a feverish overactivity almost 24 hours of the day. Tub and pack treatments seemingly had no effect upon her. On December 30, 1932, she developed a severe, acute inflammatory process in her left foot, swelling and redness being quite prominent. Within a short time the inflammatory reaction had extended halfway up the leg and her temperature rose to 105 degrees. Coincident with this infection the patient's mental condition improved and her psychomotor excitement decreased markedly. For a while she ran a septic temperature, but the infection localized on the dorsum of her foot and her temperature returned to normal. She became accessible, somewhat more cooperative and at the time of writing was well on the road to recovery.

CASE 6. Mrs. F. K., age 43, white, housewife, admitted September 9, 1932, diagnosis manic-depressive, depressed psychosis. For the past 20 years the patient had been suffering with yearly attacks of depression lasting on the average of three or four months, recovering from them spontaneously without defect. On admission she was dejected, underactive and markedly retarded, had numerous somatic complaints, spoke of the utter hopelessness of her plight and the futility of her existence. On November 2, 1932, she developed a carbuncle on her upper lip and was confined in bed for a week. During this period she showed a marked febrile reaction and was extremely prostrated. Upon her discharge from the hospital ward she seemed to be considerably improved mentally. She rapidly regained her emotional stability and in a few weeks was discharged recovered.

While the curative or suspensive action of somatic disease on certain psychoses is known, the manner in which the change is brought about is not known. A number of theories have been proposed. Those authors that favor the toxic origin of mental disease declare that the elaboration of a hypothetical antitoxin during the febrile phase of the infectious illness serves to neutralize the morbid causative agent. Some authors emphasize the restoration of the normal physico-chemical stability of the organism through an induced structural alteration of the vegetative nervous system. Others attribute the changes to chemical rearrangements of the individual cells. From a psychoanalytic standpoint the libidinous

forces bound up in unpropitious investments in the unconscious are liberated and redistributed; the demand for expiatory suffering embraced by an unconscious sense of guilt is in some way appeased. Threatened extinction of the ego and gratification of the death instinct are other possibilities.

The theories proposed differ widely in their approach. They each explain certain isolated instances, but collapse when a universal application is attempted. Why should in some cases a febrile attack produce a remission of a mental disease, and in other cases the same effect be provoked by a sudden loss of blood, or a surgical operation, or a traumatic emotional experience?

One cannot help being impressed by the fact that a large number of totally different therapeutic agents employed in psychiatry accomplish similar results. The fact that a certain drug, or physiotherapeutic measure, or psychotherapeutic procedure seemingly has brought about a remission or a cure of the psychosis obviously does not justify its exaltation as a specific.

This non-specificity is apparent also in the realm of causation, for a multiplicity of acting causes—toxic, infective, endocrine, psychogenetic—may on occasion provoke similar morbid mental manifestations. There is nothing so unique or characteristic about the various psychiatric syndromes that would permit a precise identification of the aetiological factor. Furthermore the same stimulus may produce a number of different mental reactions in different individuals. The manifold responses to alcohol and the varying clinical picture of dementia paralytica are examples. The diverse responses to the same stimulus make it probable that an inherent mediating factor exists that determines the susceptibility of an individual to a noxious stimulus and ordains the type of reaction. The basis of this susceptibility, however, is somewhat problematic.

The organism in its interaction with its environment absorbs from it not only those elements essential to its growth and development, but also noxious elements inimical to its well-being. If the deleterious influences—toxic, bacterial or traumatic—succeed in disrupting the biological equilibrium of the body, a group of adaptive and non-adaptive reactions occur, collectively known as disease. In the realm of mental disease, psychic or emotional shocks are par-

ticularly traumatic, and when frequently repeated may produce an inherent condition of specific psychic sensitivity disposing to a bio-mental upset. An inherent susceptible state is thus created and an individual so sensitized may react to trauma in a totally different way than a non-predisposed individual. Johnson<sup>4</sup> has shown in his work on the war psychoses that the most balanced personalities are apt to collapse under conditions of prolonged stress, exhibiting reactions ranging from mild neuroses to confusions and severe deliriums. It is probable that a host of noxious psychic and organic stimuli are capable in an emotionally sensitized individual of producing a mental condition which is symbolic of a disorganized bio-mental state.

The conditions obtaining in a psychosis seem to be a pre-existing state of specific psychic sensitivity vulnerable to a large number of damaging stimuli, and the potentiality of amelioration or cure by a large number of non-specific agents. The similarity between these conditions and those prevailing in allergic phenomena is at once apparent. Anaphylactic disorders have the following points in common: a pre-disposition or diathesis, described by Widal as a "colloidoclastic diathesis," liability to the influence of diverse agents, and amelioration or cure by non-specific shock therapy.

Pascal and Davesne<sup>5</sup> consider the diathesis or predisposition to mental disease on the basis of a specific psychic sensitivity, occasionally inherited but more frequently acquired by traumatic emotional experiences. This "psycho-colloidoclastic" diathesis has the following features: neuro-vegetative, mental and colloidal instability; emotional vulnerability; tendency to react by anaphylactic shock to diverse pathogenic agents; and curability by shock therapy.

The role of emotion in sensitization cannot be over-emphasized. Inhibition of the motor expressions of the emotions is provocative of widespread endocrine and cyto-humoral disturbances resembling physical disease, Cannon, Shohl and Wright,<sup>6</sup> Stoddart,<sup>7</sup> and Kooy<sup>8</sup> have reported interesting observations in this respect. Joltrain<sup>9</sup> has observed blood-vascular crises resulting from simple emotional shocks.

Clinically traumatic experiences may precipitate outright symp-

toms of anaphylactic shock, confirming the opinion that many mental conditions are analogous to allergic reactions. Cardio-vascular symptoms and collapse are prominent; examination of the blood reveals an eosinophilia, leucopaenia, increased blood coagulability and lowered blood pressure—phenomena of a haemoclastic crisis.

Shock therapy is efficacious in a number of mental diseases. A host of polyvalent "shock" provoking or desensitizing agents may be employed, among them pyrotherapy, emotional shock, glandular therapy, and leucogenic shock. A process of desensitization results and the biohumoral-vegetative reactions are stabilized. It may be that the repressions inhibiting external emotional expression are resolved and the emotional over-loading drained off. Essentially what constitutes improvement is the desensitization of the state of specific psychic sensitivity that originally fostered the development of the psychosis. Psychotherapy in the light of this hypothesis acts by desensitizing the sensitized individual. In the psychoanalytic technique the living over of infantile emotions allows for the release of biopsychic tension; the phenomenon of transference may be considered a form of shock therapy. Somatic illness occurring in the course of a mental disturbance may similarly have a desensitizing effect on the psychosis in a totally non-specific way.

It must not be supposed that amelioration or cure of a mental disease is inevitably consequent to the incidence of a somatic illness. This is unfortunately not the case. At best somatic disease influences a limited number of mental cases. The beneficial effects may be temporary and the patient may relapse into his previous psychotic condition after a variable period. It is difficult to evaluate the exact influence of somatic disease inasmuch as the better nursing care and attention that the patient gets as a result of his illness may have an associated psychotherapeutic effect. It may be opportune to stress the danger of accepting too blindly any of the various theories proposing to explain the manner in which somatic disease acts to correct a psychosis. At the present time no one theory can adequately explain all the instances. Further penetrative case studies are essential to a more scientific interpretation of the relation between physical and mental disease.

## CONCLUSIONS

1. In some cases associated somatic disease has a beneficial influence on manic-depressive reactions.
2. A great many theories have been proposed to explain this phenomenon, but no single theory is adequate.
3. The non-specificity of the curative agent raises the question whether the operation is similar to that of a shock reaction.

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## WHAT HAPPENS TO MENTAL PATIENTS AFTER DISCHARGE FROM HOSPITAL

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Roughly, the chances are that in 10 years' time, out of each 100 patients discharged from the civil State hospitals of New York, 55 will be living in the community, 21 will be resident again in a mental hospital, and 23 will have died either in the community or in a mental hospital. Forty-two of the 55 will have lived continuously in the community during the entire 10 years, without a readmission to any institution for the care and treatment of persons with mental disorders. One of the total hundred will be found in some other type of institution.

Such are among the indications of a follow-up study conducted as part of an inquiry into the "Occurrence and Social Significance of Mental Diseases in New York State," which was carried on during a three-year period from 1928 to 1931 under the auspices of the New York State Charities Aid Association in cooperation with the State Department of Mental Hygiene by means of a grant from the Laura Spelman Rockefeller Memorial Fund.\* Reports growing out of the general inquiry have already been published in this journal.\*\*

Several of the special studies were based on the records of patient history contained in the statistical files of the Department of Mental Hygiene. These traced the history of mental patients, according to the various psychotic groups, over given periods of time from first admission, with reference to such items as discharge,

\*Horatio M. Pollock, Ph. D., director of mental hygiene statistics of the State Department of Mental Hygiene, served as statistical consultant of the general study and collaborated in the planning and conduct of the various special studies.

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readmission, death, and duration of hospital life. They showed what happens to mental patients in relation to the main events of their hospital history. Two field studies were also undertaken. One was concerned with the pre-hospital history of dementia præcox and manic-depressive patients who had been admitted to the Utica State Hospital. This is described and reported in a succession of chapters now appearing in this periodical under the head of "Hereditary and Environmental Factors in the Causation of Dementia Præcox and Manic-Depressive Psychoses." The present paper is a brief memorandum-report of a field study in which information was sought regarding the post-discharge histories of mental patients.\* A few of the interesting results, without attempt at detailed analysis of all the data obtained, are presented here.

Previously reported studies in this series showed the history of first admissions as disclosed by examination of the individual patient records contained in the Department of Mental Hygiene files—and as it could not be learned from the annual reports, because the annual reports do not show the course of events (as discharges, readmissions, deaths) for individual cases. It was thus discovered what becomes of different groups of first admissions during varying periods of time following the date of first admission in each individual case: how many, according to sex and psychosis, had returned to hospital, and how often; how many had died in hospital; how many were in hospital at the expiration of given periods of time, and how many had been there continuously; and how many had been discharged without a readmission up to the date of the final examination of records in the department files. Those were studies of what happens to first admissions, so far as it could be learned from the hospital records; but they did not show what became of the patients who never came back after the last recorded discharge. At the expiration of 15 years, the net results for each 100 first admissions to the civil State hospitals were found to be:

In hospital at expiration of period .....	17
Had died in hospital .....	41
Had been discharged, no further record .....	42

\*The field workers engaged on this study were Misses Clare M. Davis, Audrey D. Deniston, and Lucy A. McNall. Miss Davis assisted the writer in compiling data used in this article.

The follow-up investigation tells us something about some proportion of the 42 per cent of first admissions who were discharged without any further record on the hospital books. The patients included in this investigation, however, were not the same persons as those who comprised the 42 per cent just mentioned, as it was necessary to go back, in the selection of cases, to discharges which had taken place approximately 10 years prior to the time of the field work, which was done in 1930 and 1931. Our post-hospital histories include those of discharged patients who were readmitted and who died in hospital, and of readmitted patients who were in hospital 10 years after going back to the community in 1920 or 1921. They also include patients who had died in the community, or who were living in the community at the time of the investigation. Of each 100 patients for whom post-discharge histories were obtained 57 never reappeared on the books of the civil State hospitals, and only two appeared on the books of any other mental hospital; while 14 had readmissions and discharges within the 10-year period of observation, these discharges constituting their last appearance on the hospital records. The post-discharge histories, although the statistical results are not comparable with those of the outcome studies for first admissions, nevertheless throw light on the question of outcomes after last known discharge from the civil State hospitals.

For the purposes of the follow-up study a list was made of patients paroled or discharged without parole from the civil State hospitals at Binghamton, Middletown, Poughkeepsie, Kings Park, and Central Islip. The names were taken in order from the hospital books, with exceptions to be noted. No account was taken of transfers or of discharges for deportation, and cases of senility were omitted. Unsuccessful paroles were eliminated, and persons whose last known residence was New York City were crossed from the list. With these eliminations, we had a list of 1,193 cases, as a list of cases to be followed up. We were unable to obtain satisfactory histories of 246 of these cases. In some instances the whereabouts of the patient could not be learned, in some he or she had removed to too great a distance from the State, in some the information obtained was too meagre to fulfill the requirements of the

study. Our complete histories are for 947 patients who had been discharged from civil State hospitals 10 years—or a few months more or less—prior to the completion of the history schedule in each individual case. The observation period was usually a little more than 10 years. The histories date from discharge, if the discharge was not preceded by parole; in most cases, however, from the beginning of a parole which ended in discharge. All the selective factors have been indicated.

Methods of social case-work investigation were employed with a research aim. The schedules called for a variety of detailed data relating to changes in the patient's family, his physical and health history, his occupational record, economic status, social environment, participation in community life, criminalistic or anti-social behavior, attitudes, and similar matters, as well as information about subsequent hospital or other institutional history and the cause of death of deceased patients. For the most part it called for objective facts, not opinions. An effort was made, however, to gauge in a general way the patient's progress and degree of success in adjusting to the conditions of family and community life. At each hospital the field worker received the cooperation and aid of the superintendent and staff, and went into the field as a representative of the hospital. The findings were discussed with the clinical director or similar officer, and ratings of degree of adjustment were made with his assistance. However, it should not be understood that anything like a clinical diagnosis was attempted by this method. These ratings of adjustment of persons in community at the time of the study were based chiefly on the evidence afforded by facts regarding their social history and behavior—how they got along with themselves and others in the normal activities of life.

Other results of this study of outcomes in the post-discharge histories of mental patients can be reported with more accuracy and assurance. For purposes of tabulation, post-discharge outcomes have been classified as follows:

- I. Those who remained continuously in community during the whole 10 years, without return to any hospital for nervous or mental diseases.
- II. Those who were in community at the expiration of the obser-

vation period of 10 years but who had been in a mental hospital at some time during the 10 years (usually in fact a civil State hospital).

III. Those who were in a civil State hospital at the expiration of the observation period, having been readmitted one or more times, including the last readmission.

IV. Those who were in some other hospital for mental diseases at the expiration of the observation period (a private hospital in New York State; a public or a private hospital elsewhere).

V. Those in some other type of institution than a mental hospital (usually in fact an institution for the care of dependents or aged people, the one exception being a nunnery).

VI. Those who had died in community without having been in any mental hospital after their entry into the community 10 years prior to the time of study.

VII. Those who had died in community, after having had another residence in a mental hospital.

VIII. Those who had returned to a civil State hospital and died while in residence there.

IX. Those who had died in some other mental hospital.

No account is taken of the number of readmissions in this report. The figures for readmitted patients refer to the number of patients, not the number of readmissions.

In summary, the findings as to outcome are as follows:

TABLE I. OUTCOME WITH RESPECT TO 947 PATIENTS DISCHARGED FROM THE CIVIL STATE HOSPITALS OF NEW YORK, DURING TEN YEARS FROM DATE OF DISCHARGE

	Male	Female	Total	
			Number	Per cent
I. In community continuously .....	146	248	394	41.6
II. In community, after readmission .....	57	65	122	12.9
III. In a civil State hospital .....	72	118	190	20.1
IV. In other mental hospital .....	7	6	13	1.4
V. In other institution .....	1	5	6	0.6
VI. Died in community, without readmission .....	69	67	136	14.4
VII. Died in community, after readmission .....	9	6	15	1.6
VIII. Died in a civil State hospital .....	37	31	68	7.2
IX. Died in some other mental hospital .....	1	2	3	0.3
Total .....	399	548	947	100.1

Of the male patients, 36.6 per cent were in community continuously for the 10 years; of the female patients, 45.3 per cent. The male patients who had a subsequent hospital history number 183, or 45.9 per cent of all the male patients. The number of female patients with a subsequent hospital history is 228, or 41.5 per cent. The percentage for both sexes is 43.4. The data shown in Table I may be recast as follows:

Outcome	Male		Female		Both sexes	
	Number	Per cent	Number	Per cent	Number	Per cent
In community after 10 years .....	203	50.9	313	57.1	516	54.5
In a mental hospital after 10 years ....	79	19.9	124	22.6	203	21.4
Had died in the 10-year period .....	116	29.1	106	19.3	222	23.4
Other outcome .....	1	0.3	5	0.9	6	0.7
Total .....	399	100.2	548	99.9	947	100.0

The fact of continuous residence in community for 10 years might, perhaps, be taken as sufficient evidence of good adjustment to family and community life, but there are reasons for doubting it. In our attempt to rate the degree of adjustment of persons who were in community at the time of the field study, we employed three terms: Good, fair, and poor. In compiling data for this preliminary paper it was deemed best to discard the middle term. The resultant classification distinguishes only between positively good adjustments and other adjustments. Among the 394 patients who were in the community continuously for 10 years, there were 267 persons (67.8 per cent) who, we feel sure, may be described as having made positively good adjustments. They were pulling their own weight, performing the ordinary duties of life in a competent manner, behaving in no noticeably different way from other people. In most instances they were working at occupations such as they had followed before they had been in hospital—not necessarily the same occupations or the same jobs, but equivalent or better occupations. Many of them were making definite advancement in occupational earnings and responsibility. At home and in the community, they were assets and not liabilities.

With many of those who did not make positively good adjustments, the explanation of continuous residence in community lay in the fact that they were being looked after by others, treated with



special tolerance by family and neighbors, and relieved of normal responsibilities and social contacts. Not a few were a heavy drag on other people. It was a parasitic sort of adjustment. What happened subsequently in such situations as a result of the economic depression can only be guessed.

Of the 146 men continuously in community, 105, or 71.9 per cent, made positively good adjustments. Of the 248 women, 162, or 65.3 per cent, adjusted with apparently real success. The age factor seems to have contributed notably to the good adjustment in the women's cases. Of the women, nearly half (115) were discharged before the age of 40; of the men a few more than half (79); that is to say, the median age at discharge was about 40 among the patients who remained continuously in community. Among the men, 72.2 per cent of those discharged under 40 made good adjustments; 71.6 of those discharged over 40. Among the women, 72.4 per cent of those discharged under 40 made good adjustments, but only 59 per cent of those discharged after the age of 40. Otherwise stated, 54.3 per cent of the men who made good adjustments had been discharged before the age of 40; while 53.7 per cent of those who did not make positively good adjustments were discharged before that age. With the women, however, the corresponding percentages are 51.5 and 36.8.

In later reports other relationships will be considered. It may be noted, however, in this preliminary paper, that among the cases in which good adjustments were made by persons continuously in community the distribution by psychotic groups is as follows: With cerebral arteriosclerosis, 3; general paralysis, 4; with cerebral syphilis, 2; with other brain or nervous diseases, 2; alcoholic, 11; due to drugs and other exogenous toxins, 1; with other somatic diseases, 16; paranoia or paranoic conditions, 3; manic-depressive, 91; involution melancholia, 20; dementia præcox, 49; epileptic psychoses, 6; psychoneuroses and neuroses, 20; with psychopathic personality, 13; with mental deficiency, 15; undiagnosed, 11.

The distribution by outcomes and by psychotic groups of the entire group of 947 patients included in the follow-up study is shown in Table II. The groupings by psychosis follow the recorded diagnoses on the hospital books and the standard classification found in the statistical guide of the Department of Mental Hygiene.



TABLE II. DISTRIBUTION BY OUTCOME AND PSYCHOSES OF 947 PATIENTS FOR WHOM TEN-YEAR POST-DISCHARGE HISTORIES WERE OBTAINED

Psychoses	Total	In community continuously	In community after readmission	In a civil State hospital	In other mental hospital	In other institution	Died in community without readmission	Died in community after readmission	Died in a civil State hospital	Died in some other mental hospital
Males—399 Cases										
With cerebral arteriosclerosis .....	21	2	1	1	..	..	12	..	4	1
General paralysis .....	15	4	1	..	..	..	2	..	8	..
With cerebral syphilis .....	3	2	1	..	..	..	..	..	..	..
With other brain or nervous diseases..	1	1	..	..	..	..	..	..	..	..
Alcoholic .....	29	16	4	1	..	..	6	2	..	..
Due to drugs or other exogenous toxins	3	1	..	..	..	..	1	..	1	..
With other somatic diseases.....	6	3	..	..	..	..	2	..	1	..
Manic-depressive .....	122	44	26	19	..	..	20	4	9	..
Involution melancholia .....	13	6	..	1	..	..	4	..	2	..
Dementia præcox .....	104	31	11	42	7	..	8	1	4	..
Epileptic psychoses .....	7	3	1	..	..	..	1	1	1	..
Paranoia or paranoic conditions .....	6	2	1	1	..	..	1	..	1	..
Psychoneuroses and neuroses .....	17	7	3	2	..	..	5	..	..	..
With psychopathic personality .....	21	10	3	1	..	..	3	1	3	..
With mental deficiency .....	23	11	4	4	..	1	2	..	1	..
Undiagnosed .....	8	3	1	..	..	..	2	..	2	..
Total .....	399	146	57	72	7	1	69	9	37	1
Females—548 Cases										
With cerebral arteriosclerosis .....	14	5	..	2	..	..	4	..	3	..
General paralysis .....	5	..	1	..	..	..	1	1	2	..
With cerebral syphilis .....	2	2	..	..	..	..	..	..	..	..
With other brain or nervous diseases..	1	1	..	..	..	..	..	..	..	..
Alcoholic .....	3	2	..	..	..	..	1	..	..	..
Due to drugs or other exogenous toxins	1	..	..	..	..	..	1	..	..	..
With other somatic diseases.....	21	16	1	..	..	..	3	..	1	..
Manic-depressive .....	205	78	37	43	3	3	26	1	13	1
Involution melancholia .....	40	24	2	3	..	1	6	1	3	..
Dementia præcox .....	138	57	7	54	2	..	11	1	5	1
Epileptic psychoses .....	9	4	..	3	..	..	2	..	..	..
Paranoia or paranoic conditions .....	15	7	1	2	1	..	2	1	1	..
Psychoneuroses and neuroses .....	32	20	3	3	..	..	4	1	1	..
With psychopathic personality .....	33	15	9	4	..	1	2	..	2	..
With mental deficiency .....	11	5	2	3	..	..	1	..	..	..
Undiagnosed .....	13	12	2	1	..	..	3	..	..	..
Total .....	548	248	65	118	6	5	67	6	31	2

TABLE II. DISTRIBUTION BY OUTCOME AND PSYCHOSIS OF 947 PATIENTS FOR WHOM TEN-YEAR POST-DISCHARGE HISTORIES WERE OBTAINED—(Concluded)

Psychoses	Total	In community continuously	In community after readmission	In a civil State hospital	In other mental hospital	In other institution	Died in community without readmission	Died in community after readmission	Died in a civil State hospital	Died in some other mental hospital
Both Sexes—947 Cases										
With cerebral arteriosclerosis .....	35	7	1	3	..	..	16	..	7	1
General paralysis .....	20	4	2	..	..	..	3	1	10	..
With cerebral syphilis .....	5	4	1	..	..	..	..	..	..	..
With other brain or nervous diseases..	2	2	..	..	..	..	..	..	..	..
Alcoholic .....	32	18	4	1	..	..	7	2	..	..
Due to drugs or other exogenous toxins	4	1	..	..	..	..	2	..	1	..
With other somatic diseases.....	27	19	1	..	..	..	5	..	2	..
Manic-depressive .....	327	122	63	62	3	3	46	5	22	1
Involution melancholia .....	53	30	2	4	..	1	10	1	5	..
Dementia præcox .....	242	88	18	96	9	..	19	2	9	1
Epileptic psychoses .....	16	7	1	3	..	..	3	1	1	..
Paranoia or paranoid conditions ....	21	9	2	3	1	..	3	1	2	..
Psychoneuroses and neuroses .....	49	27	6	5	..	..	9	1	1	..
With psychopathic personality.....	54	25	12	5	..	1	5	1	5	..
With mental deficiency .....	34	16	6	7	..	1	3	..	1	..
Undiagnosed .....	26	15	3	1	..	..	5	..	2	..
Total .....	947	394	122	190	13	6	136	15	68	3

A summary of the results in 327 manic-depressive cases, 242 cases of dementia præcox, and 378 cases representing all other psychoses is contained in Table III. These results are given in percentages of the total number of male patients, of female patients, and of patients of both sexes in each of the three psychotic classifications employed. Patients in other institutions than mental hospitals are not considered in these calculations. "In community after 10 years" includes patients in community continuously and patients in community at the time of the study who had been in a mental hospital at some time within the 10 years. "In a mental hospital" refers to any mental hospital, not necessarily a civil State hospital. "Readmitted to a mental hospital" means that the patient was either in a mental hospital at the time of the study or had been in a mental hospital one or more times within the observation period of 10 years. The table is to be read as follows: 57.4 per cent of the

male manic-depressive patients were in community at the end of 10 years; 55.8 per cent of the female manic-depressive patients; 56.6 of all the manic-depressive patients. And so on. It will be noticed, for instance, that while only 19.9 per cent of the manic-depressive patients were in a mental hospital at the expiration of the 10-year period, 43.3 per cent of the dementia præcox patients were then in hospital.

TABLE III. SUMMARY IN PERCENTAGES OF FINDINGS AS TO OUTCOME WITH REFERENCE TO THE TWO LARGEST GROUPS OF PSYCHOSES, ALL OTHER PSYCHOSES, AND ALL PSYCHOSES

Manic-Depressive—327 Cases			
	Male	Female	Both sexes
In community after 10 years .....	57.4	55.8	56.6
In a mental hospital after 10 years .....	15.6	22.4	19.9
Had died in the 10-year period .....	27.0	20.0	22.6
In community continuously .....	36.1	38.0	37.3
Readmitted to a mental hospital .....	47.5	47.8	47.7
Dementia Præcox—242 Cases			
In community after 10 years .....	40.3	46.4	43.8
In a mental hospital after 10 years .....	47.1	40.6	43.3
Had died in the 10-year period .....	12.5	13.0	12.8
In community continuously .....	29.8	41.3	36.4
Readmitted to a mental hospital .....	61.9	50.7	55.8
All Other Psychoses—378 Cases			
In community after 10 years .....	52.6	65.3	59.5
In a mental hospital after 10 years .....	6.4	10.7	8.7
Had died in the 10-year period .....	40.5	22.9	31.0
In community continuously .....	41.0	55.1	48.1
Readmitted to a mental hospital .....	34.7	29.3	31.7
All Psychoses—947 Cases			
In community after 10 years .....	50.9	57.1	54.5
In a mental hospital after 10 years .....	19.9	22.6	21.4
Had died in the 10-year period .....	29.1	19.3	23.4
In community continuously .....	36.6	45.3	41.6
Readmitted to a mental hospital .....	45.9	41.5	43.4

## TREATMENT OF PSYCHONEUROSIS IN STATE HOSPITALS\*

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In State hospital practice, we are constantly being confronted with problems dealing with psychoneurosis. Most cases can be and are being treated, outside of hospitals and by educating the family physician in the proper technique of handling these cases the number of psychoneurotic admissions should be materially reduced. Of course it is realized that in many communities the State hospital physician is the only one equipped to administer the proper therapy. This he can do in the clinic or out-patient work or act in an advisory capacity to the family physician. Yet, the fact must not be overlooked that psychoneurosis is a problem within the realm of the family doctor. We see these cases occupying beds in general hospitals, alone, depressed, bemoaning their fate attempting to gain sympathy, sent to the general hospital for purpose of observation, X-ray examination or some other laborious diagnostic procedure. As we show these patients an understanding attitude and give them opportunity to relate their difficulties, transference is easily obtained. In many instances one interview is sufficient. By bringing the unconscious wishes to the surface and by pointing a way out of the conflict which the patient is encountering, it seems that the effect of our treatment is almost miraculous. The patient gets out of bed with a new hope, a new courage, new comprehension, because for the first time he has been given an opportunity to relate his story in its entirety without interruption; he feels that his condition is understood and he has found a way out of his difficulties. There is no longer any need to continue his complaints of fatigue and physical ailments. Their basis in the psyche has been found and explained in terms which he can comprehend.

We see these cases in the out-patient department of the hospital, sent to us by the family physician as a last resort, with the counsel to follow our advice. The patient comes with his satchel filled with prescribed and patent medicines, for he has been told that it may be necessary to remain in the hospital and he feels that he will need

\*Read at the Interhospital Conference held at Utica, May 4, 1934. From the records of the St. Lawrence State Hospital, Ogdensburg, New York.

the support of the medication which he has been taking religiously for years. These conditions are not necessary and are rapidly disappearing. The leadership in psychiatric activities must necessarily fall upon the State hospital in many districts and the State hospital physicians must accept this responsibility.

It is not within the premise of this paper to evaluate the different forms of therapy, for there is much of value in each, whether it be analysis, suggestion, persuasion or re-education; much can be done for the psychoneurotic. Each case should be studied and treated as an individual. Dr. Hutchings has pointed out in his address, "Psychotherapy in Public Mental Hospitals," published in *The American Journal of Psychiatry*, November, 1933, that "it is unusual to find a State hospital patient who can comprehend the deeper mechanisms or understand their interpretations. Their conflicts lie near the surface, can sometimes be quickly recognized and translated for their benefit, as far as may be necessary, in terms which they can understand in the practical application to their daily lives." He points out that this is not psychoanalysis but that it is psychotherapy. Dr. Roscoe W. Hall in his address, "The Organization of Psychotherapy," published in the same journal stresses the importance of the personality of the psychotherapist and states that in St. Elizabeth Hospital not only are the patients selected for psychotherapy but the psychotherapist is selected for the patient. In our hospitals we have been doing this unconsciously, but a conscious application of it may be more effective. He further points out that psychotherapy is a combination of adaptation and insight and that while the latter is highly desirable adaptation is more essential. It would seem that for our purpose, this last statement is of extreme value. The following cases are examples of the different types of psychoneurosis met in hospital practice. The outcome in most was favorable, but in some not so good. The technique is variable and indicated in each instance.

W. E., a man of 36, came to the St. Lawrence State Hospital, April 10, 1933, complaining of worry, depression, insomnia and inability to do his work. The history showed that he was frail and underweight during infancy; that he reached the second year of high school at 16; then worked in a garage one summer but left on account of a disagreement with his employer. He then worked in another garage for a short time with

the same result. He went to work on his father's farm but left there because of a disagreement over getting married when he was 17. He lived with his wife three years and then separated from her because of her infidelity, and returned to his parents. Later he secured a divorce. There was a boy born of this union but the patient's parents-in-law were given custody over him. Patient was given the privilege of seeing the boy twice a year but never exercised the right. He worked on his father's farm several years. At the time of the war he was ill with what was called pneumonia for six months and thus was prevented from enlisting. He has never had any trouble with his lungs since that time. After leaving his father's farm, he worked in Syracuse as a motorman but left this job because of "nervousness." He was worrying about running over people. He stated he has always been "nervous" and that his mother before him was "nervous." He then came north and worked in a garage; quit to go into business for himself. He was given \$15,000 by his mother but lost this in the stock market crash of 1929. Remarried six years ago. His wife had a premature stillborn baby 16 months before his admission and she was quite ill with hypertension and renal disease.

For two years before admission he had been complaining of "heart spells and gas in his stomach which seemed to crowd his heart." He stated his heart would try to beat but the gas in his stomach would prevent it. The attacks would come on in the afternoon when, as he stated "I got kind of tired along in the afternoon." He went from one physician to another but without relief. His condition grew worse until his wife described him as follows: "He has become more interested in his own health; worried concerning his supposed physical ailments; stated he had heart trouble and was continually taking his own pulse; complained of constipation and frequently took cathartics. He has been constantly under the physician's care and traveled from one doctor to another. He had been told by many physicians that there was nothing wrong with him. He has not been sad but he does not laugh or carry on as he did previous to his illness. He finally went to bed and remained there." There was no psychomotor retardation; there were no ideas of sinfulness or self-condemnatory ideas. His chief complaints were his physical condition aggravated by fatigability. He cooperated well; discussed his condition willingly and gave a detailed account of his difficulties. There were long frequent interviews in which the patient did most of the talking. The essential factors brought out were: Influence of his mother during his early life; over-solicitude partly on account of her own personality and due to the fact the patient was frail as an infant; a sickly, pampered type of child. He established a faulty habit reaction. He left school when there was no necessity for it; left one job after another for trivial reasons; married when he was unprepared, and, when his wife was unfaithful, there was separation and divorce and a return to the parental protection. He left his job on the street car line because of "nervousness." He had already begun to show traits of neurasthenia. Then followed loss of inheritance, the premature stillborn child, and two years of marked hypochondriasis with fatigue. His final explanation of the illness, when his symptoms disappeared, was that he was working in his garage; collections had become poor; he felt that people who owed him money were living far better than he was and he thought he might as well quit entirely. He found it difficult to adjust to a reduced economic standard of living. He attached a great deal of significance to his ambition to free himself from his first wife's domination by having a child by the second wife, and this frustration played a very significant part in the development of his neurosis. This syndrome was the outcome of a very profound and complicated adjustment involv-



ing his entire life. The psychotherapy was in the form of frank, stimulating talks; explanations were given; at first he was assigned to occupational therapy on the ward, then to the occupational center and finally he worked with the painters.

This case brings out the fact that the physical examination should be performed with thoroughness, completeness, and with confidence. No doubt should be expressed in the presence of the patient. Whatever physical disorder is found should be treated, but only as a physical disorder, with no claim that it will also cure the mental illness. If no physical disease is found, the patient should be informed of this fact with no doubts expressed. Our patient stated that the physicians he had consulted did not examine him thoroughly and did not seem to assure themselves as to his physical condition. His treatment was of four months' duration with a favorable outcome.

The next patient shows a reaction to a recent intolerable situation. Treatment was easier and of shorter duration.

R. L., a married woman of 30, admitted to the St. Lawrence State Hospital, June 18, 1931, complaint of a bearing down feeling in her head with a burning sensation and prickly feeling in her skin and of "nervous spells." She complained also that her head felt heavy at times. In the mental examination she related her symptoms and although reluctant at first to discuss her domestic situation soon told of discord with her husband. In the preceding December she had had an instrumental delivery. Her baby lived four days and died of cerebral hemorrhage. In March she had a tumor in her abdomen and was told it was something in connection with her pregnancy which had settled there. On March 10, she had a hemorrhage similar to her menses when she passed large clots; then the tumor disappeared. She had been married since the age of 16 and told of abuse by her husband at intervals. One of the neighbors had recently told her that the baby's death was due to the fact that she had been delivered in a hospital and that too much morphine had been used. She worried over these remarks but felt that she could not ask this woman to remain away from her home because this neighbor's 14-year-old daughter had been coming there to assist in the housework since her confinement. Patient's husband had become demonstrative toward this girl and had been showing a diminished affection for his wife. She said she felt as though the pressure and head sensations would disappear, if her husband would resume his former affectionate attitude toward her. She related further details of marital conflict and complained of insomnia. She continued to complain of burning sensations in her head, dryness of the throat as though there was a mass there; nervousness and heart flutters, with a prickly sensation in the hands.

Daily lengthy interviews were had with her in which her situation was discussed and on the eighth day after admission she stated she could see the connection between her husband's attitude and her physical symptoms. She then improved rapidly; all the symptoms disappeared. She left the hospital after less than two months' stay. Apart from a slight acneiform rash on the forehead the physical examination was negative. She reacted with a fatigue syndrome to a difficult domestic situation.

These two cases are typical and reacted well. Occupational therapy and physiotherapy were useful adjuncts in establishing their rehabilitation. The intelligence rating of the second patient was such that no complicated explanations could be given, other than in very plain understandable terms. She has had no recurrence since leaving the hospital.

For the anxiety neuroses Freud postulates the theory of excess sexual excitation and diminished gratification. While these factors as outlined in Freud's paper on the "Anxiety Neuroses" exist in many cases yet psychic factors play an important part in many.

W. T., a single man of 26, came to the hospital in March, 1929, complaining of depression, worry over financial affairs and masturbation. He complained also of stomach trouble. In the mental examination he related what he thought were excessive sexual experiences. He stated there were frequent quarrels with his parents who told him that these practices would eventually kill him, and he was afraid his experiences would really be the cause of his end. He had visions of death; said that whenever he passed a cemetery he had a strong attachment for it and it required a great amount of energy to resist going in to inspect it. He pictured himself in his grave. He shuddered whenever he saw a hearse. He complained of agitation and anxiety in relation to effects of nocturnal emissions. He said they were weakening him. In his own words "It seemed to make me nervous. Now, your talking to me has me all shaking. The minute anybody starts talking in earnest, I will begin to shake. I can stand it all right but I get nervous." He complained of symptoms referable to his heart and stomach; said his liver was bad and he thought "every organ in his body was destroyed." He had night terrors. He said he would wake up in the night with the palm of his hand paining; then this became numbness which was present at the time of admission. He was worrying about his business. He had bought a truck and had expected to pay for it out of the proceeds of his sales, which did not come in as fast as they might. He had been courting a girl for about two months and she gave him a definite negative answer six months prior to admission. There was no retardation, difficulty in thinking or self-condemnatory ideas. His mother said he began to be sad and melancholy and acted afraid of some terrible calamity. Physical examination was negative.

Summarized briefly: Here is a young man, 26, with faulty sex adjustment, indulging excessively, suddenly stops the practice when he courted the girl; then business worries. He has anxiety, trembling spells, hypochondriasis, night terrors and mild depression. In subsequent interview with him, it was brought out that he believed the semen originated in the brain, traveled down the spinal cord and then to the external genitalia; and that is why he felt he would be weakened and eventually die as the result of his practices. During the course of many talks with him his personality was studied, his anxieties allayed, the effect of his worries pointed out and among other things when the physiology of the genital system was explained to him and he was told that the effects of masturbation were not so serious as he thought, immediate relief was obtained.

A single man of 39 came to the hospital in September, 1931. He was worried over his physical condition. His stomach bothered him, there was a "drawing" feeling in his chest, pain in his throat, insomnia, forgetfulness and trembling spells. His description

of his anxiety attack is as follows: "I am walking along, working, sitting or doing anything. All of a sudden I get a burning sensation in my stomach. It is not that anything is wrong but it is a trembling feeling. I feel uneasy. I have pain in the neck, my eyes burn, nose feels crusted, a roaring sensation in my ears and then I tremble all over." Physical examination was negative. X-ray of gastrointestinal tract was negative. He had three post-operative scars on his abdomen, one for appendicitis in 1916, and the other two in May, 1931, for adhesions. His symptoms were found to be closely related to the sexual perversions he was practicing with the woman with whom he was living (coitus interruptus) and the worry over the effects it might produce on his physical condition. He had read of these in various forms of literature. He also had the fear of being discovered by her husband, who was a close friend of his. In the interviews with him explanations were given, his physical symptoms were correlated with his fears and anxiety, he gained insight, gave up his symptoms. The physical examination was conducted as outlined previously. He was assured as to the negative findings. Occupational therapy was assigned to him and assisted in his improvement. He left the hospital after four months and made an adjustment outside. He has had one attack since but of short duration, when he was out of work. This attack did not require hospitalization.

In cases of psychasthenia, although there may be sex experiences early in life where the subject acted in the aggressive role, nevertheless, adult situations play a prominent part, as shown by the following case:

M. D., a married woman of 27, a graduate nurse, was sent to the St. Lawrence State Hospital from a general hospital because it was felt that psychoanalysis offered the only possible help, after all other remedial measures had failed. She had complained for two years of headache, worry over physical condition and depression, dizziness after meals, gas on stomach, nervousness, pain in back, arms and legs, and she was convinced she had a brain tumor. The treatment required 16 months but resulted favorably. She had sadomasochistic tendencies; had ideas of killing women, particularly those who were kind and considerate toward her. There were fears that she might choke to death; that she had cancer, concussion of the brain, syphilis, tuberculosis; that she would become blind. There were frequent attacks of anxiety, many of them during the interviews, when there were impulses to commit self-destruction. She related a sexual trauma at eight committed by a boy playmate. Then she became the aggressor with her five-year-old girl cousin. During this time she was sleeping with her father and had many incestuous wishes. She resented the fact that her requests for a separate sleeping room were denied by her parents until she was 13 when her grandmother interceded. She had witnessed the sexual act at the age of four. She visualized herself as married to her father and had death wishes regarding her mother. A typical electra situation. During her training she had frequent fears that she had administered the wrong medicine or had given the wrong dosage and each time a patient died she felt that she was in some way responsible. She was in several general hospitals for treatment for cystitis, cholecystitis, pyelitis, hemorrhoids and melena. All diagnostic procedures had been carried out. Her symptoms became exaggerated shortly after her marriage. Her husband was a poor provider. She had to live with his parents and many conflicts arose. Throughout the analysis she expressed many doubts as to the advisability of returning to him.

Although she cooperated well and realized that she was reacting to her unsatisfactory domestic situation by recalling and reviewing her early years at home and that her impulse to kill was the expression of her electra complex and that she was utilizing her physical complaints as a means of avoiding the difficult marriage situation, she did not show any inclination to give up her symptoms until her husband secured steady employment and was able to provide a home for her. Since then she has engaged in nursing.

While there is the infantile sexual situation in this case and while she had fears, doubts and phobias practically all her life, the situation became intensified with her marital position, which was of decided influence in this case. Marriage had represented to her a refuge from the domination of her parents, but due to economic difficulties, she was not allowed to exercise her independence. Thus, frustration played a significant part.

#### Another case in which the result was not so favorable:

A married woman of 40 came to the hospital complaining of depression, worry and compulsive washing of the hands and teeth. She thought she was not getting all the dirt off; she also suffered from insomnia. She went through many rituals, such as closing the faucets so tightly that the family could scarcely open them. She scrubbed the furniture until all the finish came off; she changed her clothing many times a day. After she went to bed she would have to get up several times to rearrange her clothing on the chair. This patient did not remain in the hospital long enough (two months). She cooperated poorly and was very reluctant to discuss her intimate affairs. She left during a temporary improvement against advice. Although the period under treatment was too brief, there was brought out a great deal of marital discord, with a strong mother fixation which she could not break off. She has since been admitted to another hospital.

D. R., a married woman of 27 years, came to the hospital complaining of a crawling sensation in her stomach, flashes, a lump in her throat and a fear that she had a tapeworm. She said she was depressed. There was remorse and a fear that she had not done all that she might for her baby who had died six months previously. She had purchased some medicine at a circus from an Indian. On the label of this bottle there was printed the statement that she should not be surprised if she passed a tapeworm. After taking this medicine for a while, she vomited some shreds which looked to her like pieces of tapeworm. She had several attacks of anxiety and by the time of admission she had the sensation as though the worm was crawling in her throat and she had to eat food to keep the worm in place. At times, she stated, the worm encircled her heart and caused the pain which would eventually prove fatal. If it did not kill her this way, it would continue to grow and cause intestinal obstruction. At home she complained of diarrhoea but in the hospital during the first five days of admission there were only three stools. She had a mental age of 13 years 11 months. However, the domestic situation was gone over and she expressed a desire to have her own home. She had been living with her in-laws. A letter addressed to her husband, while in the hospital, expressed her attitude. I quote from the letter as follows: "Don't you think that we ought to go back in our own home when I get back home? It seems as it would

seem more like home to me, I bet you feel the same." After the letter was sent, a reply from the husband stating he agreed with her was received. She reacted better to treatment and left the hospital after three weeks' residence. She is now well adjusted living in her own home, well and happy.

These cases are typical and illustrate the problems dealing with the obsessive, compulsive neurotic. While there may be predisposing factors nevertheless improvement can be brought about by attention to the exciting causes.

Fugues may occur in hysteria and the amnesia in these cases may be either complete or partial. There frequently will be found the "Islands of Memory" where some event will stand out in the memory but will be completely surrounded by amnesia. For example:

S. C., a single man of 38, was admitted to the St. Lawrence State Hospital, July 28, 1931. The petition stated that he was returned by the Canadian officers to the United States immigration officers at Rouses Point—"that he acts dazed; does not know where he is; says his head bothers him; he is irrational; said he can not remember anything concerning names or recent happenings to himself—a victim of amnesia. He could not remember coming into the country; said he was not a laborer but he could not remember what he used to do." This was his condition upon admission to the hospital. He walked about mute; had a dazed and perplexed expression on his face and was bewildered. After encouragement with suggestion, he improved and became more conversant. He related some details about a bus accident in which he had suffered a very slight injury in the preceding February, five months prior to admission. Even when he did begin to talk, there was amnesia for a period of time beginning on July 4. He had made plans to go on a vacation with a friend but just where or when he could not remember. The next thing he really knew was that he was in a hospital. When tested out for his amnesia, he was able to recall being returned by the Canadian officials. He was able to recall his trip to the hospital but the first thing he remembers clearly and distinctly was August 5 when in the hospital. This was one week following admission. His early life was discussed with him. He gave a history of similar attack in France when he was with the English army and received a slight shrapnel wound for which he was treated in a base hospital. He returned to his division and three weeks later he was returned to the hospital suffering from shell-shock; treated there for two years. Since that time he has had attacks of dizziness and confusion and inability to concentrate. At these times he did not realize where he was; the spells would last anywhere from two to three days. He said he had always been odd; that he never did like being in a crowd; that whenever he was in a crowd he had a peculiar sensation pass through him. His first attack began in France. He was assigned to duty as a stretcher bearer. During a gas attack and heavy shelling a shell exploded about three or four feet from him. The noise was deafening; the flash terrifying and for two days after that he did not know what he was doing. He was unable even to recall some incidents during that attack. There were many intense experiences during the course of his treatment when he would relive the scenes of his trauma and advantage was taken of these states of self-hypnosis for suggestion. He had improved considerably after 15 months' hospital residence, but still had mild lapses of memory.



Hysterical attacks in children may be imitations of symptoms seen in adults suffering from physical disease.

G. H., a girl of 12, was admitted to the hospital with a complaint that she was nervous and shaky at times; that she was worried over examinations; cried easily; was unable to control herself. She also had difficulty in swallowing and made peculiar noises in her throat. She was somewhat depressed. The spells which she had resembled very closely asthmatic attacks. There was difficulty in breathing; she was pale and anemic looking. The history showed that there was constant friction between the parents and this reacted unfavorably on the girl. Also, she was having difficulty in school. The symptoms began around Christmas, 1931. She had visited a neighbor and witnessed the preparations for Christmas; then returned to her own home where no such arrangements were under way. She was standing in a room with her mother when she suddenly gasped, became pale and trembled; said to her mother, "I need air." She grew faint and would have fallen to the floor had she not been supported by her mother. She developed further attacks and began to make the peculiar clearing sound in the back of her throat. She had numerous spells in which she cried, "Be near me—don't leave me; I'm going. I'm going. Give me a drink." Then she would become pale and shake and would beg to be taken to the neighbors.

On admission to the hospital her conduct was practically the same. She clung to the nurses; was shy, trembled; continued to make the same noise in her throat. This girl was imitating the attacks which she had observed in her mother who was suffering from cardiac disease. The separation in this case from the home environment; the stimulating and explanatory talks which were given to the child, brought about a very marked improvement. At first there would be exacerbations when her parents visited her but she soon became accustomed to them. The situation was explained to the parents and, while their friction was diminished to a noticeable extent, it still continued. However, with the aid of an interested neighbor, this child has adjusted to her environment; has joined the Girl Scouts and is doing better work in school.

Conversion symptoms may take the form of myoclonic contractions. Psychic factors play an important part in their development.

L. A., a married woman of 47, came to the hospital in June, 1932, complaining of depression, weakness, fatigue, headache of four months' duration. For three weeks before admission she was unable to walk and had a myoclonic contraction of the right shoulder. She came to the hospital leaning on her husband and daughter. If they removed their support she staggered and would have fallen. When she was being taken to the ward by the nurse, she went through the same procedure. She said she had been irritable, sensitive to noise, fault-finding and could not understand at all what was taking place within her. She thought she had a brain tumor and had been drinking about 12 cups of coffee a day for the relief of her headache. When the situation was gone over with her, she said that the symptoms had become exaggerated when her oldest daughter was planning to go housekeeping by herself. This case was solved by the patient herself by means of a dream. She dreamed she was in a room filled with postage stamps and every one was walking on them; some one was trying to keep her out but she walked in and out of the room the same as the others. When asked if she had been planning any



trip she said "Why, yes—that's just it: My husband was planning to take a trip to Rochester to visit his family and I didn't want to go. I never did get along with my mother-in-law; she had opposed our marriage in the first place and has been antagonistic ever since." Patient said she had been trying to dominate the situation at home; that she had been keeping her children subjugated to her and she did not feel as though she could meet the situation when they were about to express their independence of her. She also complained of diplopia but this did not conform to the findings of hemianopsia when tested with an eye shield. By means of frequent frank discussions she improved rapidly and appreciated the connection between her subconscious wishes and her symptoms. She walked without assistance; her myoclonia and diplopia disappeared and she left the hospital after less than three months' residence. She made an adjustment outside the hospital for about a year and a half when she returned complaining of irritability, depression and insomnia. There has been some difficulty between her husband and his mother over some property. Her condition is not so severe as during her first admission.

#### Here is another case of a similar type.

E. W., a girl of 21, entered the hospital complaining of nervous spells, difficulty in breathing and choking sensations, with trembling, dizziness and weakness. She had fainting attacks but did not lose consciousness. While she had been having minor attacks of this practically all her life, the symptoms had become exaggerated about two months before admission when her mother returned from a vacation. Patient had been sickly all her life; it had been necessary for her to leave school due to nervous attacks. The father was dead and the mother had assumed the masculine as well as the feminine role. She was very domineering and harsh; a severe critic; fault-finding and a censor of all patient's activities. For two years she had been keeping company with a young man who wished to marry her but this her mother vigorously opposed due chiefly to a difference in religion. This was a difficult situation to handle. Here was a mother professing that she was trying to do everything within her power for her children (and it was our belief that she was sincere) and any suggestion to the contrary was met with vehement denial. Finally, however, the mother did accept our suggestion that she was too strict and critical with the patient. Patient stated that she feared to marry against the wishes of her mother because she did not feel as though she could throw off the family yoke. Patient herself understood where her difficulty lay. Finally, with her mother's consent, she was married and there have been no subsequent attacks.

Much can be done for the psychoneurotic by the application of a modified analysis, or as it has been termed "mental analysis." Physiotherapy is a practical application. This together with the complete physical examination and the treatment of any physical disorder, which may be present, shows the patient that his condition is being understood and treated. When the physical examination is negative, the patient should be given assurance of this fact only after the complete examination has been made. Resorting to subterfuges is to be deplored. Giving of medication with the label that it is a "nerve tonic" or that it will help his "nervous con-

dition" is fallacious and may prove detrimental toward the final recovery. It may prove beneficial temporarily, but eventually will lose its potency when there will have to be a change in the medication, or, more likely, a change in physician, due to loss of confidence. The establishment of confidence is of prime importance and must be maintained on a sound basis.

Insomnia should be treated by administration of sufficient sedation and the sedatives should be repeated as often as is necessary to induce the necessary amount of sleep. The fear that the patient will rely upon the sedative is erroneous and unfounded and has been disproved by experience. As soon as these patients begin to improve the sedative is spurned by them. Hydrotherapy is of value here also.

Occupational therapy aids in bringing the patient back to face reality; to face the situation from which he has turned, with confidence restored.

These factors all play a very important part in the treatment, yet the fact must not be overlooked that they are only adjuvants to the main form of treatment which is psychotherapy. A good rapport should be established, the symptoms unravelled in the chronological order of their development, the unconscious material correlated with the symptoms, mental and physical, with as much explanation of the mechanisms involved as the patient's intelligence will permit. The explanations should be in plain, simple, understandable terms. The interviews must be long enough to permit the patient to unburden himself. Haste must be avoided. By educating the family physician to his proper place in the treatment of these disorders, the number of admissions can be reduced.

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## SOME CLINICAL MANIFESTATIONS OF TRAUMATIC DECEREBRATION

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In the course of the past 15 years it has been pointed out repeatedly that phenomena of decerebrate rigidity which had been observed in experimental animals occurred also in human subjects as manifestations of various brain lesions.<sup>1, 2, 3, 4, 5</sup> The cases reported represent, of course, partial, not total decerebration.

Decerebration experiments on animals, even including monkeys, can teach us little if anything conclusively about the possible effects of decerebrating lesions in human subjects. For any knowledge of human decerebration syndromes we are dependent on clinical data.

Large amounts of clinical material serviceable in this connection are to be found among cases of cerebral birth trauma. The main object of this communication is to present briefly the results of some recently concluded studies of such material.

It seems that among the decerebration syndromes that may result from head trauma at birth are to be counted definitely the following: Little's disease, congenital athetosis and other extra-pyramidal syndromes, many cases of mental deficiency, the majority of cases of epilepsy in children, and certain chronic deteriorating psychoses of young subjects which have been counted hitherto for the most part among the schizophrenias. In many cases are to be observed combinations of any two or more of these syndromes.

There is considerable evidence indicating that the following conditions, too, are possibly to be included among the decerebration syndromes which may result from head trauma at birth: some cases of behavior problem, including juvenile delinquency and criminality; left-handedness; certain ties; and a whole series of speech disorders of childhood, including congenital aphasia, dysarthria, stammering, cases of "non-readers", "non-spellers", and the like. As is well known, these conditions also may exist singly or in various combinations, and they are found relatively more often in epileptic and feeble-minded subjects than in children who are otherwise normal. There is need for further research in this field.

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In connection with some of the above-mentioned conditions, particularly mental deficiency, epilepsy, and chronic psychoses, *hereditary factors* in etiology have often been stressed. In the light of certain recent findings, however, it would appear that neuropathic heredity is neither a constant nor an essential factor in the etiology of these conditions.

A telling instance of such findings is that pertaining to epilepsy in twins. Our own recently gathered series of cases<sup>6</sup> has revealed the data shown in Table I.

These findings suggest the following conclusions concerning hereditary factors in the etiology of epilepsy: (a) Such factors undoubtedly exist, as is indicated by the contrast between monozygotic and dizygotic twins. (b) The hereditary factors are often, in themselves, inadequate for the production of epilepsy, as is indicated by the many cases of monozygotic twins in whom only one of the pair is affected. (c) The hereditary factors are not invariably present—therefore not essential—in the etiology of epilepsy, as is indicated by the great proportion of cases among dizygotic twins in whom both of the pair are affected.

TABLE I. EPILEPSY IN TWINS

Type of twins	Total pairs of twins	One affected	Both affected	
			Similarly	Dissimilarly*
Monozygotic, males .....	8	3	5	0
Monozygotic, females .....	14	5	7	2
Same-sex, dizygotic, males....	13	11	2	0
Same-sex, dizygotic, females...	25	20	0	5
Opposite-sex, dizygotic .....	45	32	7	6
Totals .....	105	71	21	13

\*In these cases one of the twins had epilepsy and the other had some other neuropsychiatric affection, such as mental deficiency, deteriorating psychosis, behavior problem, etc.

This excessive proportion is brought out most strikingly in a comparison of dizygotic twins with siblings. Among the dizygotic twin-brothers and twin-sisters of epileptics in our series 10.7 per cent also had epilepsy. In contrast with this, Humm has found in his recent study<sup>7</sup> that among the siblings of epileptics only 1.1 per cent also had epilepsy.

There is no reason for supposing that between dizygotic twins there is a closer genetic relationship than between siblings. In so far as epilepsy is of hereditary etiology, it should not be more common among the dizygotic twin-brothers and twin-sisters of epileptics than among their siblings. If found to be more common, the excess of its incidence can be attributed only to factors other than heredity.

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*Age* seems to be an important factor in the etiology of traumatic decerebration syndromes. For example, head trauma occurring at birth or at an early age is much more likely to produce epilepsy than it is in later life. As a matter of fact, it has been amply shown<sup>8,9</sup> that head trauma in adults rarely results in epilepsy.

In our opinion the fundamental point involved here consists in the well-known fact of the greater ability possessed by brain tissue to withstand compression than extension. For example in the process of head molding during birth the decerebrating lesion is produced, in all probability, not so much by the generally incriminated compressing forces applied along the transverse diameters, as by the forces along the vertical axis, to which the brain substance is subjected and which consist in compensatory extension. It is obvious that, save in cases of massive hemorrhage, the pressure which is exerted upon the brain has the effect not of reducing its volume but merely of altering its shape by compressing it in one direction while extending it in another.

It is equally obvious that in infancy, prior to the closure of the fontanelles and ossification of the sutures, a fall on the head, a kick by a horse, a carriage running over the head, and the like, similarly have the effect not only of applying compression, but also extension, to the brain substance.

Even in later childhood, or in adolescence before the skull has attained its full growth and rigidity, it has undoubtedly a great enough flexibility, so that blows can still have the effect of marked extension as well as of compression.

At adult ages, when the skull has become fairly rigid, a traumatic decerebrating lesion can hardly be produced otherwise than by direct extensive bruising and destruction of brain substance, such



as may result from fractures of the vault by direct violence. Hence, in adults, fractures of the base hardly ever produce epilepsy, as Reichmann,<sup>10</sup> among others, has pointed out.

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In the discussions of the etiology of epilepsy, mental deficiency, and Little's disease the factor of birth trauma has been mentioned often enough. We are led to bring the matter up for further discussion because our material has yielded new data shedding additional light on this factor and on its manner of action.

In the majority of cases of epilepsy, mental deficiency, and Little's disease no birth trauma is reported. Often it is definitely stated that birth occurred at full term and was normal in every respect.

It is equally true that in the majority of cases of prolonged, difficult, instrumental labor resulting in the delivery of a cyanotic, partly asphyxiated child requiring measures of resuscitation, the child subsequently develops normally and without the supervision of epilepsy, mental deficiency, or Little's disease.

It would seem that we are dealing here with two factors: *birth trauma* and *vulnerability*.

Birth trauma cannot be truly said to be absent in any case—except perhaps in cases of pre-arranged delivery by Caesarian section prior to the onset of labor. Nor can it be truly said in any case that the brain is wholly invulnerable. It must be judged merely that in the majority of childbirths the traumatizing forces are relatively not severe enough, or the vulnerability is relatively not great enough, for the labor to result in material injury to the cranial contents of the child.

The severity of the birth trauma is dependent upon the well-known circumstances which determine more or less difficult labor; primiparity, especially in the fourth or fifth decade of life; early rupture of the bag of waters; narrow pelvis or pelvic obstruction of any kind; breech or other abnormal presentations; any condition necessitating application of forceps, especially in the high forceps operation; and the like.

The degree of vulnerability, too, varies with many factors, and these merit a more detailed analysis.



There is reason to believe that there is an *hereditary* vulnerability of the central nervous system. It is possibly the principal hereditary factor in epilepsy.

Degree of vulnerability can be shown to be dependent to some extent on *the factor of sex*. This is suggested not only by the consistently higher male foetal and infant mortality observed everywhere and under the most varied conditions,<sup>11, 12, 13</sup> but also by the higher incidence of all the traumatic decerebration syndromes, which we have enumerated, in the male than in the female sex. Perhaps the most convincing evidence on this point is to be found among opposite-sex twins. In this connection our own material reveals the findings in Table II.

TABLE II. MENTAL DEFICIENCY AND EPILEPSY IN OPPOSITE-SEX TWINS

Clinical groups	Total pairs of twins	Both twins affected	Male alone affected	Female alone affected	Excess of males affected, per cent
Mental deficiency . . . .	81	34	31	16	30.0
Epilepsy . . . . .	45	7	24	14	47.6
Totals . . . . .	126	41	55	30	35.2

Another factor influencing vulnerability is that of *maturity at birth*. It has been shown that premature birth, underweight condition at birth, or a combination of both, determines a relatively high incidence of stillbirths and a relatively high mortality in infancy and early childhood.<sup>14</sup> Among the surviving premature children there is a relatively high incidence of mental deficiency, Little's disease, and epilepsy. This is indicated by both pathological and clinical studies, such as those of Little,<sup>15</sup> Ylppö,<sup>14, 16</sup> Schott,<sup>17</sup> Philipp Schwartz,<sup>18</sup> Capper,<sup>19</sup> Looft,<sup>20</sup> and our own.<sup>21</sup>

The crucial evidence on this point is revealed by a comparison of dizygotic twins with siblings, as already stated.

Obstetrical experience has shown consistently that premature birth, underweight condition at birth, or both, occur much more frequently in connection with multiple than with single pregnancies. Hence, as one would expect, there is also a higher incidence of stillbirths and a higher mortality in infancy and early childhood among twins.

Among surviving twins there is a higher incidence of mental deficiency than among children born singly. Also the reverse is true, i. e., that among the feeble-minded there is a higher proportion of twins than among children of normal intelligence. We have observed and reported these relationships.<sup>21</sup> Similar observations have been reported by Looft.<sup>22</sup>

As regards a comparison of dizygotic twins with siblings with reference to mental deficiency, it has already been statistically demonstrated by Humm<sup>7</sup> and by ourselves<sup>21</sup> that twins, as a group, are intellectually handicapped.

Among our 147 pairs of dizygotic twins, selected by reason of at least one of the pair having mental deficiency, we find that the other twin also had mental deficiency in 71 cases (48.3 per cent).

Among the 182 brothers and sisters (not twins) of his 50 subjects with mental deficiency, Humm found that only 24 (13.2 per cent) also had mental deficiency.

The evidence seems conclusive to the effect that cerebral vulnerability is dependent in part on degree of maturity at birth; that immaturity increases the hazard of birth trauma and, with it, a corresponding hazard of epilepsy, mental deficiency, Little's disease, and other decerebration syndromes; and that these hazards exist in greater degree in cases of twins than of single pregnancy.

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It has been pointed out, particularly by Karl Pearson,<sup>23</sup> that mental deficiency, insanity, criminality, and some other handicapping conditions occur relatively more often among the first-born than among the later-born. The same seems to be true of epilepsy.

Thus, from the order-of-birth statistics furnished by Shanahan,<sup>24</sup> based on data pertaining to patients admitted to the Craig Colony, it appears that among a total number of 10,039 children in families of from 2 to 20 children with at least one epileptic child in each family, there were 1,709 first-born and 8,330 later-born children. Of the first-born children 402, or 23.5 per cent, were epileptic; of the later-born 1,307, or 15.7 per cent, were epileptic. Similar statistics have been furnished by Green,<sup>25</sup> from whose data it appears that epilepsy was found in such families in 24.0 per cent of the first-

born children, and 18.1 per cent of those from second to fifth in order of birth, and 9.1 per cent of the sixth or later-born.

The usual and obvious interpretation of such figures is to the effect that they discount heredity as an adequate or essential factor in the etiology of epilepsy. They point to birth trauma as a factor, such factor coming into play more often in cases of primiparae than in multiparae.

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It is not difficult to understand infantile cerebral palsies, extrapyramidal syndromes, mental deficiency, and mental deterioration as decerebration phenomena which may result from head trauma. The case is different with regard to epilepsy. Perhaps the most puzzling feature is the periodicity of some of its manifestations.

Possibly, for some cases, especially those of Jacksonian type with readily localizable lesions, the theory, advanced by Penfield,<sup>26</sup> Foerster,<sup>27, 28</sup> and others, holds the correct explanation, namely, that cicatricial traction, by producing a spreading reflex vasomotor spasm, starts the seizure; and it may be that this theory has some bearing on other types as well. The available facts indicate, however, that an unqualified generalization would hardly be permissible and that even in the traumatic group alone cases must differ widely as to details of pathogenesis.

Sometimes one or more seizures occur immediately or shortly after birth trauma or the post-natal trauma. Upon recovery from the immediate effects of the trauma in many cases the seizures subside never to return. In other cases, after an interval of weeks, months, or years, the seizures recur and become established over a period of years or permanently.

In still other cases the seizures make their first appearance not immediately after the trauma, but after an interval of weeks, months or years. This has been observed so often that it must be regarded as an incontestable fact. We select, at random, the reports of Bychowski,<sup>29</sup> pertaining to World War cases in which the first seizures occurred at intervals varying from three months to two years after the trauma; Reichmann,<sup>30</sup> pertaining to peace time cases in which the first seizures occurred immediately following the trauma or after intervals up to three years; Foerster and Pen-

field,<sup>28</sup> including cases of birth as well as post-natal trauma, in which the time elapsed from the trauma to the first seizure was from two to nine years; and Fincher and Dowman,<sup>31</sup> pertaining mainly to cases of Jacksonian character, with intervals between trauma and first seizure varying up to 14 years, and, in one case of birth trauma—held by the authors as being open to question—amounting to 19 years.

No doubt the many cases of long interval between trauma and first seizure have been a cause of underestimating the importance of trauma in the etiology of epilepsy. This must be especially true with reference to cases of birth trauma; for in such cases the fact of trauma is often entirely overlooked or lightly disposed of by those in attendance and either remains unknown or is forgotten by the parents or the patient. Thus in many cases the clinical history taken in later years yields no clue to the etiology, but leads to classification in the "idiopathic" group.

In the majority of traumatic cases we are dealing evidently not with immediate effects of trauma, but with chronic and progressive tissue pathology which is initiated by the trauma and which, in its turn, eventually produces epilepsy.

The fact of the progressive nature of the post-traumatic lesion in many cases is borne out not only by the delay in the occurrence of the first seizure, but also by both clinical and pathologic data. On the clinical side the evidence consists in cases characterized by steady increase in the severity and frequency of the seizures and by a more or less rapid mental deterioration. On the pathologic side the evidence consists in the well-known changes which are obviously of long development—dilatation and distortion of brain ventricles, cysts, atrophies, adhesions, scleroses, almost tumor-like scars, over-growths of neuroglia, and the like.

Here, too, generalizations are not permissible, as the subject bristles with complexity. A progressive course is not observed in all cases. In many cases the course is merely chronic without aggravation of the seizures and without any mental deterioration. In some other cases the course seems to be a self-limited one, characterized by gradual improvement and perhaps terminating in spontaneous recovery—this especially in children, who are said to have outgrown the fits.

There is strong evidence, some of it contained in our material, to the effect that the epileptic syndrome in traumatic cases is determined not by the severity or extent of the original brain injury, but, it must be inferred, either by its localization, or by the inflammatory reaction with progressive tissue change which follows it, or by both.

Often a birth trauma sufficiently severe to produce a completely crippling Little's disease, or a low grade of imbecility, or a combination of both, leaves the subject entirely free from epileptic seizures of any kind. On the other hand, many cases of epilepsy which can be attributed only to birth trauma are not only free from mental deficiency or any traces of cerebral palsy, but also from all other neurologic and roentgenologic evidences of a brain lesion. In such cases, obviously, the decerebrating lesion, which the theory assumes to exist, must be indeed a slight one and localized in a "silent" region.

However this may be, the possibility must be stressed of epilepsy resulting from a *slight* head trauma. This position alone affords an explanation for the greater frequency of epilepsy among the first-born than among later-born children already referred to above.

This position, moreover, is in harmony with the observations reported years ago by Sharpe and Maclaire,<sup>32, 33</sup> which show how much more often evidences of intra-cranial hemorrhage in the newborn are discovered with the aid of routine spinal puncture than by clinical observations alone.

In cases of twins in which only one of the pair is epileptic it is much more common for the first-born than for the second-born twin to be the one thus affected. This is true of monozygotic as well as of dizygotic twins.

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As already stated, further research is needed in this field. The conditions which we have listed tentatively as decerebration syndromes resulting from birth trauma should be re-investigated in the light of the theory here advanced. The theory demands the following criteria for the establishment of any given syndrome as a decerebration syndrome resulting from birth trauma:



1. Inasmuch as there is apparently an hereditary factor among those determining cerebral vulnerability, it may be expected that if one of a pair of monozygotic twins shows one of the syndromes under consideration, the other of the pair will also be affected—not invariably, but consistently more often than in cases of dizygotic twins.

2. In a significant proportion of cases the affection in the two twins of a monozygotic pair may be expected to be dissimilar quantitatively or even qualitatively (i. e., with different decerebration syndromes, as, for example, epilepsy in one and mental deficiency in the other); the reason being that factors other than heredity may determine both degree of vulnerability and severity, extent, and localization of the birth trauma.

3. Partly by reason of the hereditary factor or factors, the near relatives of subjects with decerebration syndromes may be expected to be affected, similarly or dissimilarly, more often than random groups from the unselected population.

4. The degree of genetic relationship existing between dizygotic twins is the same as that between siblings. However, dizygotic twins, more often than siblings, are exposed to common pre-natal and intra-natal factors other than heredity. For this reason it may be expected that the dizygotic twin-brothers and twin-sisters of subjects affected by one of the above-mentioned syndromes will also be affected, similarly or dissimilarly, more often than their siblings.

5. Inasmuch as premature birth, or underweight condition at birth, or both, are among the factors determining cerebral vulnerability, it may be expected that subjects with a history of such conditions at birth will furnish a higher proportion of any given traumatic decerebration syndrome than the unselected population.

6. Inversely, among subjects exhibiting a given traumatic decerebration syndrome we may expect to find a relatively high proportion of cases with a history of premature birth, underweight condition at birth, or both.

7. Because premature birth, underweight condition at birth, or both, occur more often in twins than in single births, the incidence of any given decerebration syndrome may be expected to be higher



among twins—either monozygotic or dizygotic—than among subjects born singly.

8. Age is, of course, a factor. For obvious reasons any decerebration syndrome attributable to birth trauma may be expected to occur mainly as a disorder of childhood or adolescence. Similar syndromes developing in adult life may be expected to be less common and would be attributable to decerebrating lesions of other origin: post-natal trauma, cerebral arteriosclerosis, neuro-syphilis, brain tumor, and the like. It goes without saying that the decerebration syndromes of childhood may be met with in subjects of more advanced ages in the shape of chronic residuals.

9. Inasmuch as both general and cerebral vulnerability is apparently more marked in male than in female foetuses and infants, sex becomes a factor. Accordingly, it may be expected that any given decerebration syndrome attributable to birth trauma will be found with greater frequency in boys than in girls.

10. Inasmuch as labor is, as a rule, more prolonged and more difficult in primiparae than in multiparae, we may expect to find the incidence of any given decerebration syndrome to be higher among the first-born than among the later-born children.

11. For similar reasons it may be expected that an etiologic relationship will be found to exist between any factor of dystocia—narrow pelvis, abnormal presentations, early rupture of the bag of waters, conditions necessitating rapid or instrumental extraction, and the like—and any given decerebration syndrome.

12. While the various conditions which we have listed tentatively as decerebration syndromes, and perhaps some others as well, are often enough seen as isolated clinical phenomena, it may be expected that with significant frequency any one of them will be found in combination with one or more of the others in the same individual: e. g., left-handedness in association with epilepsy, with speech disorders of childhood, or with behavior troubles; or sub-normal intelligence combined with epilepsy or followed by a deteriorating psychosis developing in adolescence. This, of course, is theoretically accounted for by the common etiology of decerebration syndromes of early life.

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A final word as to an important implication of our discussion. Should further researches furnish any measure of verification of the theory here advanced, it need surprise no one, in the light of what has been said above, to find the key to the solution of some large problems of mental hygiene to be in the hands of the obstetricians and no one else.

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## HEREDITARY AND ENVIRONMENTAL FACTORS IN THE CAUSATION OF DEMENTIA PRAECOX AND MANIC-DEPRESSIVE PSYCHOSES

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### CHAPTER IV

#### *Comparative Studies of the Prevalence of Mental Disease Among Relatives of Patients and Among the General Population*

In the preliminary discussion concerning the prevalence of tainted heredity among patients with mental disease, we stressed a fundamental flaw in all of the early literature. This consisted in the failure to compare the family statistics of mental patients with a standard, such as the expectation of mental disease in the general population. The first study to attempt such a logical comparison was that of Dr. Jenny Koller, whose contribution was published in 1895. A comparison was made on a much larger scale by Dr. Otto Diem, whose results were published in 1905. In our analysis of these investigations, we stressed two sources of possible error. We questioned, in the first place, whether the population used as a norm, really represented a random selection from the general population. We also indicated a possible source of confusion in the failure to deal with homogeneous groups of patients. It is possible for heredity to be an important factor in the causation of dementia praecox, for example, whereas its influence in the causation of general paralysis might be negligible. To eliminate these objections we limited our analysis to two groups of patients, both admitted to the Utica State Hospital within a prescribed interval. One group consisted of patients with dementia praecox, the other of patients with manic-depressive psychoses. With respect to nature of disease, and geographical selection, each group was therefore homogeneous. The incidence of mental disease in the several degrees of relationship was then compared with the expected incidence for such a group if the latter were selected randomly from the general population of New York State. The results, given in detail in Chapter I and III, indicate that the family incidence of disease (especially in the case of the siblings) is greater than the expected incidence.

So far as known to the writers, Wagner von Jauregg was the only other investigator to suggest the importance of using the expectation of mental disease as a standard of comparison with the families of mental patients, but he did not, himself, proceed to such an analysis. In the past two decades, however, there has been a systematic attempt on the part of Ernst Rüdin and his co-workers in the Deutsche Forschungsanstalt für Psychiatrie in Munich to arrive at normal rates of mental disease in the general population, with which the rates in specific family groups may be compared.

The theoretical basis underlying the work of this school is set forth at length by Luxenburger in his important monograph entitled "Demographische und psychiatrische Untersuchungen in die engeren biologischen Familie von Paralytikerehegatten (Versuch einer Belastungsstatistik der Durchschnittsbevölkerung)."<sup>1</sup> He writes:

"What is required as comparative material for use in modern investigations in biological inheritance is a statistical enumeration of taints in the general population. We must investigate the kindred of probands, who were obtained through pure chance, and in a manner which does not lead us à priori to fear either a positive or negative selection; the probands should, wherever possible, be old persons, in order that we may be able to deal with the appearance among their relatives of those anomalies whose period of exposure falls within advanced ages; and in order that we may obtain figures to be used in comparison with statistics of inheritance among descendants; the material must become very great in the course of time in order that one may be sure to come across rare anomalies; the investigation must include all classes of relatives among both the immediate and remote blood relatives; the investigation must include a discussion, as complete as possible, of all those characters that have a relation to the modern problem; it must therefore deal principally with things whose correlative significance is already known, or which lie at the basis of established hypotheses; it must serve in the analysis of the problems of mental and physical types; it must . . . also give special consideration to general demographic problems. Many of these criteria must naturally remain as ideal requirements for the time being. Should we succeed in obtaining a

population in this way, we shall then have a material in which the most varied hereditary traits are encountered, grouped, or related to one another; which combine with or displace each other, in a manner which is characteristic of the biological aggregate of living mankind."<sup>2</sup> The problem is how to obtain material of this kind.

"In theory, the answer to this question is simple: We select a sample of the population of a large city. The manner of selection must be such as to exclude every form of social, economic, medical and psychiatric selection . . . From among those individuals whom we obtained through such a process of sampling, we take all who are above 40 years of age, and investigate their immediate and remote kin. It is evident that the probands are themselves a selection in accordance with their power of survival. The error, however, will not assert itself among their relatives. As a key to the solution we could, in theory, select the passersby on the streets of the central part of the city—we could select those on foot, on bicycle, in carriages, in automobiles, in ambulances . . . The immediate vicinity of hospitals, barracks, prisons must naturally be avoided. One can also think of other criteria: of the inhabitants of long thoroughfares, which traverse several districts of a city, of the passengers of certain trains, of the patrons of large theaters, of the voters in a centrally located election district—assuming, however, that the dangers of a qualitative selection cannot be demonstrated."<sup>3</sup>

It is admitted that no investigator is in a position to carry out such a selection. The practical solution proposed by Luxenburger is as follows. To begin with, the investigator must avoid choosing as probands, physically sick persons whose condition may be correlated with mental disease. On the other hand, those whose condition is correlated with the absence of mental disease must also be avoided, as this would tend to produce obviously low rates of mental disease among the kindred. Nevertheless sick persons are the only practical choice as probands, and it remains to select from among them those patients who would cooperate in the development of the family history, but who would not give rise to the dangers of selection previously indicated.

The practical solution is due to Rüdin who suggested a genealogi-



cal investigation of the spouses of patients with a psychosis which does not presuppose an hereditary basis. It would be a mistake to select the spouses of schizophrenics, for example, because assortative mating would tend to produce a group similar in pre-psychotic make-up to the original group, and would consequently fail to represent the general population. Such a selection does not operate however among the spouses of patients with general paralysis, or senile psychoses, or those with cerebral arteriosclerosis, because such patients prior to the onset of their psychoses, were themselves presumably typical of the general population.

For these reasons Luxenburger selected as his sample, the siblings and parents of the spouses of patients with general paralysis. The patients were selected from the genealogical section of the Deutsche Forschungsanstalt für Psychiatrie in Munich. A group of spouses of 100 such patients included 580 siblings of whom 321 were males and 259 females. The siblings included 13 cases of mental disease, of which 3 were dementia præcox, 1 manic-depressive, 1 epilepsy, 4 general paralysis, 1 hysteria, 1 oligophrenia, and 2 undiagnosed psychoses. These 13 cases represented 2.24 per cent of the total siblings. Males and females had corresponding percentages of 2.18 and 2.32, respectively. Two corrections are needed, however. The first is for those who died prior to the lower limit of the age of exposure, the other for those who are normal but still within the age limits of exposure. According to Weinberg and Rüdin, the correct expectation may be obtained from the formula:

$$\frac{100n}{b-a-\frac{a'}{2}}$$

in which  $n$  represents the number of psychotic individuals,  $b$  the total siblings,  $a$  the number below the age of exposure, and  $a'$  those within the proper age limits. In the case of dementia præcox, the limits were taken between 18 and 40 years, inclusive; for manic-depressive psychoses, they were 21 to 50 years; in general paralysis, 31 to 50 years. Applying these corrections Luxenburger obtained as his expectation of mental disease, 4.39 per cent. For dementia præcox and manic-depressive psychoses, the expectations were 1.01 and 0.43 per cent, respectively. There was an expectation of 1.83 per cent for general paralysis. The latter expectation must be regarded with caution, inasmuch as it indicates a higher preva-

lence of general paralysis than of dementia præcox. The experience of New York State, however, based upon data carefully compiled over many years points conclusively to a higher prevalence of dementia præcox. The suspicion is therefore aroused, that with respect to general paralysis, at least, Luxenburger's sample may not be truly random.

Comparing his data with other studies of a similar nature, Luxenburger finally summarized as follows: "The expectations of mental disease with respect to dementia præcox, manic-depressive psychoses, epilepsy and general paralysis seem to us capable of practical expression for an average urban population, i. e. (Munich). These expectations are:

"For dementia præcox, 0.85 per cent; manic-depressive psychoses, 0.41 per cent; epilepsy, 0.29 per cent; general paralysis, 1.73 per cent. The figures for dementia præcox and general paralysis, especially are sufficiently stable to be used as norms."

Kattentidt<sup>5</sup> carried out an investigation along similar lines, using as probands 93 spouses of general paralytics. His investigation extended to nephews and nieces. Schulz had indicated the utility of a study of nephews and nieces, but his investigations started from schizophrenics. Kattentidt attempted to avoid the hereditary anlage by using as his point of departure individuals who were supposedly free of any hereditary taint. The original patients were received in the Munich Psychiatric Clinic and their diagnoses were established through serological examination. His study embraced 477 nephews and 421 nieces. He also studied 629 siblings of the original probands. Kattentidt's results for the siblings were in close agreement with those of Luxenburger, due, in part, to the fact that the former included some of Luxenburger's probands in his material. Kattentidt found an expectation (uncorrected) for all mental diseases, including oligophrenia and epilepsy, of 2.40 per cent, compared with a similarly uncorrected expectation of 2.24 per cent, according to Luxenburger. In dementia præcox, Kattentidt found an expectation of 0.32 to 0.46 per cent, compared with Luxenburger's finding of 0.52 per cent. In the manic-depressive psychoses, the expectations were 0.16 and 0.17 per cent, respectively. Kattentidt's essential statistics relate, however, to the nephews and

nieces of the spouses of the patients with general paralysis, among whom he found the following uncorrected expectations: dementia præcox, 0.11 per cent; epilepsy, 0.22 per cent; imbecility, 0.22 per cent; psychopathy, 0.33 per cent; alcoholism, 0.44 per cent; suicide, 0.33 per cent; eccentricity, 0.78 per cent.<sup>6</sup> Kattentidt made some further comparisons with data compiled by Schulz among siblings, nephews and nieces of schizophrenics. Among the siblings Kattentidt found 83.6 per cent normal, Schulz 78.8 per cent. Kattentidt found 1.91 per cent described as eccentric (sonderling), Schulz 7.57 per cent. In dementia præcox the percentages were 0.32 and 1.39, respectively; for other psychoses, the percentages were 2.06 and 1.59, respectively. Among the nephews and nieces Kattentidt reported 90.5 per cent normal; Schulz reported 85.5 per cent normal. Those described as eccentric constituted 0.89 and 3.88 per cent, respectively. In dementia præcox, the percentages were 0.11 and 0.55, respectively. The preceding percentages were all uncorrected for age. Correcting in the usual way, Kattentidt obtained an expectation of 0.37 per cent for dementia præcox among the nephews and nieces. Schulz obtained 1.4 per cent. Kattentidt concludes: "The expectation of dementia præcox among the nephews and nieces of schizophrenics is 3.8 times as great as that of nephews and nieces drawn from the general population". . . and, "The danger of the appearance of eccentrics . . . is 4.4 times as great for the nephews and nieces of schizophrenics as for the corresponding degree of relatives in the general population."

Schulz<sup>8</sup> attempted to obtain expectations for the general population through a study based upon 75 wives and 25 husbands of patients with cerebral arteriosclerosis seen in the Munich Psychiatric Clinic. Reasons for selecting the spouses in this manner are similar to those expounded at greater length by Luxenburger. The 100 probands included 547 siblings among whom Schulz discovered 2 cases of dementia præcox, 1 of manic-depressive psychosis, 1 of epilepsy, 4 of general paralysis, 2 of cerebral syphilis, 1 of senile psychosis, 2 of oligophrenia, 1 of psychopathy (a committed case). Correcting for incompleteness of exposures, Schulz obtained the following expectations: 0.68 per cent for dementia præcox, 0.38 per cent for manic-depressive psychoses, 0.29 per cent for epilepsy; 1.64 per

cent, for general paralysis; 0.76 per cent, for cerebral syphilis; 2.0 per cent for dementia senilis; 0.58 per cent for oligophrenia, and 0.29 per cent for psychopathy, a total expectation of 6.62 per cent, which exceeds the corrected expectation for the general population of 4.39 per cent, obtained by Luxenburger.

Brugger<sup>9</sup> studied the spouses of patients seen in the Psychiatric Clinic in Basel. Previous studies had pointed to a greater incidence of dementia præcox in Basel than in Munich, and one purpose of Brugger's study was to verify this result. The patients were selected on the basis of the absence of a hereditary disease. They included 88 cases of general paralysis, 5 of tabes, 5 of cerebral syphilis or luetic meningitis, 18 of cerebral arteriosclerosis, 1 of post-encephalitis, and 2 of brain tumor or abscess. The spouses of these 117 patients constituted the probands in this study, and they had 594 siblings. Brugger found the following corrected expectations for Basel: dementia præcox, 1.53 per cent; oligophrenia, 0.43 per cent; psychopathy, 0.43 per cent; epilepsy, 0.22 per cent. Epilepsy and oligophrenia are about equally prevalent in Basel and Munich. The expectations for general paralysis and manic-depressive psychoses, however, were unusually low in Basel. Dementia præcox is about twice as prevalent in Basel as in Munich. After comparing his results with those of Luxenburger and Schulz, Brugger sets forth the following expectations as norms: 0.75 per cent for dementia præcox; 0.15 per cent for manic-depressive psychoses; 0.45 per cent for epilepsy, and 0.55 per cent for general paralysis. "A norm (for demential præcox) of about 0.008 (0.8 per cent) may therefore be regarded as a standard for a large geographic and ethnographic area. This was obtained from a general population of 4,127 inhabitants, among whom were 1,423 persons who had passed the period of exposure for dementia præcox."<sup>10</sup>

Schulz<sup>11</sup> also attempted to arrive at general expectations by a study of the siblings and parents of 100 patients in a general hospital in Munich. He found lower expectations than those cited in the preceding studies. The general 'corrected' expectation among siblings was 2.91 per cent, subdivided as follows: dementia præcox, 0.76 per cent; epilepsy, 0.27 per cent; oligophrenia, 0.54 per cent; undiagnosed psychoses, 0.27 per cent; psychopathy, 0.80 per cent; other, 0.27 per cent.

We have already explained that the purpose of the preceding studies was to set up standards with which the statistics obtained from families of patients with mental disease may be compared. It is therefore essential that the samples of the general population be truly random. That is, the sample must be constituted in the same manner as the general population with respect to age and sex proportions, economic and other social characteristics, religious and racial make-up, etc. Now it is obviously difficult to set up a large sample, selected in such a way as to be a true cross-section of a large population. The more heterogeneous the original population, the more difficult it is to avoid the numerous possibilities of biased selection. Whatever may be the theoretical virtues of the method propounded by Rüdin and elaborated by his associates, we must continue to feel that the results are open to grave suspicion, unless verified in some other manner. Even though selection may be less obvious in the studies than in the so-called normal groups of Koller and Diem, the possibility of selection is nevertheless not ruled out. The dangers of the method are set forth by Fritz Magg as follows: "In all the cases we are concerned with the relatives of the spouses of the mentally ill. The danger of selection is thereby given a definite direction. (Frequency of marriage within the same occupation and rank of society, the tendency of certain occupations and social positions to definite types of illness, frequent marriages between individuals with similar—or dissimilar—traits, or the tendency of definite characteristics toward a definite disease)".<sup>12</sup> To this may be added the suspicion that selection arising from assortative mating is not entirely ruled out in general paralysis.<sup>13</sup>

These dangers may be avoided, if, instead of seeking a small random sample, one resorts directly to a complete census, as a result of which the mentally diseased may be compared with the population from whom they are derived.

Carl Brugger<sup>14</sup> undertook such a census of all living cases of mental and nervous disease among the population of two districts in Thuringia (Stadtröda and Jena). The census was begun on October 10, 1929. "In all, 37,561 individual schedules were obtained. Of these 37,516 individuals lived in the census district, and 45 were in institutions. Excluded were 9 cases of mental disease



who came from without the district, and were merely under family care in the district, and 575 abnormal persons in various institutions and schools, whose homes were not in the district. Visitors totaling 224 were excluded from the census."<sup>15</sup> Among the 37,561, there were reported 222 abnormal persons. After personal investigation Brugger reclassified some of these as normal. However, he also made many additions to the list, as a result of more information, so that his total of abnormals became 494, constituting 1.31 per cent of the population. Those classified generally as psychopaths included cases of psychoses, hysteria, all imbeciles and idiots, and in addition those individuals whose lack of adjustment was so pronounced that they and their associates suffered as a consequence.

A State census in Thuringia in 1925 showed that 0.278 per cent were mentally ill. Brugger's later statistics gave a percentage of 1.31. Brugger's results included many who had not been committed to an institution, whereas the results of the State census, carried out by laymen, included only well-recognized, and mostly institutionalized cases. Brugger's results also exceeded those for Allgäu (in Bavaria) as reported by Lange.<sup>16</sup> The latter found 1.14 per cent in a community where goiter is endemic, and mental debility, deafness and dumbness are relatively frequent.

The following table compares Brugger's results with those of Luxenburger and Schulz.\*

	Corrected expectations according to	
	Brugger	Luxenburger-Schulz
	Per cent	Per cent
Schizophrenia .....	0.38	0.85
Manic-depressive .....	0.11	0.41
Epilepsy .....	0.08	0.29
General paralysis .....	0.05	1.73
Cerebral syphilis .....	0.02	0.41
Arteriosclerosis .....	0.26	...
Senile .....	0.32	0.70

\*Taken from Brugger (14), page 372.

The preceding percentages represent corrected rates. The periods of exposure were taken as 21 to 40 years for schizophrenia; 16 to 50 years for manic-depressive psychoses; from birth to 30 years for epilepsy; 31 to 50 years for general paralysis; 51 to 70



years for arteriosclerosis and 61 years and over for senile psychoses.

Brugger's statistics appear to be significantly lower than those obtained through the selection as probands of spouses of patients with general paralysis, etc., and strengthen the belief that assortative mating results in the latter samples being more heavily tainted than the general population.

In a later study,<sup>17</sup> Brugger quotes v. Verschuer as estimating a total of 280,000 schizophrenics in Germany. In Thuringia, however, Brugger found only 73 cases in a population of 37,561. Applying this ratio to all Germany, Brugger estimated only 117,406 schizophrenics. Allowing for age differences, Brugger revised his estimate to a total of 130,000 to 140,000 for all Germany.

Continuing his investigations, Brugger undertook another census on a basis differing somewhat from his previous study.<sup>17</sup> He selected every 8th household in Allgäu, until he had a total of 100. He used the husband and wife as probands, each in 50 cases, and then examined their siblings and parents. Seven families were subsequently dropped from the investigation because of lack of detailed information, leaving 93 probands, consisting of 44 women and 49 men. All but 13 of the probands were over 40 years of age, almost all were between 41 and 70. The probands included one case of alcoholism, 1 of eccentricity, and 2 of debility. Brugger admits an element of medical selection in his sample, since Allgäu is a center for goiter and cretinism.

The siblings of the probands totaled 545. Among them Brugger found 27 cases of mental disease, classified as follows: 3 cases of schizophrenia, 1 of manic-depressive psychosis (the diagnosis was doubtful), 1 of epilepsy, 2 of alcoholism, 6 of imbecility and idiocy, 3 of debility, 4 of eccentricity, 1 of involution melancholia, 1 of traumatic psychosis, 1 other psychosis, and 4 other types of abnormality. Obtaining corrected percentages in the usual manner, Brugger summarized the results as follows: schizophrenia 0.98 per cent; manic-depressive (doubtful) 0.40 per cent; epilepsy, 0.26 per cent; imbecility and idiocy, 1.32 per cent; all grades of mental debility, 2.12 per cent; alcoholic, 0.53 per cent; eccentrics, 1.06 per cent; other abnormality, 1.06 per cent.

Analyzing in a similar manner the parents of the probands, he obtained data for 88 fathers and 93 mothers. The corrected percentages are as follows: schizophrenia, 0.55; manic-depressive (doubtful) 0.55; debility, 0.55; alcoholic, 1.10, and eccentricity, 1.16.

Klemperer<sup>18</sup> attempted to arrived at general expectations of mental disease through a special form of census. He selected 1,000 names from the birth registers of Munich relating to the interval 1881 to 1890, and then investigated the status of these individuals as of 1931. In this study it was not the relatives, but the probands themselves who were investigated. Of the 1,000 probands, sufficiently detailed information was lacking in 120 cases, leaving 880 for analysis. Among these he found 21 cases of mental disorders, classified as follows: 3 cases of congenital feeble-mindedness, 5 of dementia præcox, 2 of epilepsy, 2 of psychogenic defects, 2 psychopaths, 1 alcoholic psychosis, 3 of cerebral syphilis and 3 other psychoses. His more important percentages, corrected in the usual manner, are: dementia præcox, 1.4; feeble-mindedness, 0.7; epilepsy, 0.24 (or 0.48 if a doubtful case is included); psychopathy and hysteria necessitating hospitalization, 0.73; general paralysis, 1.76. These, with the exception of general paralysis, are in excess of the percentages reported by Luxenburger and Schulz.

The most extensive census of this type was that undertaken by Brugger<sup>19</sup> with the financial assistance of the Rockefeller Foundation. This is part of a larger census which it is hoped will ultimately include 10,000 inhabitants, representative of north and south Germany, and of rural and urban populations. Brugger's preliminary report gives the results for 5,000 individuals in 5 communities in Allgäu, in Bavaria. On the day of the census (Stichtag) October 10, 1930 there were, in round numbers, 6,000 persons in the area. Of these 5,425 were finally included in the analysis. Among these were 406 individuals, or 7.48 per cent, who were described as abnormal in a psychiatric sense. The latter included all forms of psychoses, hysteria, mental defect, psychopathy, and alcoholism. Allgäu, however, being endemic for goiter, would have more than the average frequency of feeble-mindedness and cretinism. Excluding neurasthenia, psychopathy and alcoholism, and considering only mental disease in the strict sense, Brugger found 49 cases, or 0.90

per cent of mental disease, compared with 0.59 per cent in Thuringia and 0.44 per cent in Bavaria (1925).

Of the 406 persons described as peculiar (*auffällig*) only 26 were in an institution on the day of the census; 54 had been hospitalized at least once during the year. Of the truly psychotic (excluding the feeble-minded, alcoholics, etc), 27 had been in an asylum and 22 had not.

Using Rüdin's method, Brugger obtained corrected percentages as follows: Dementia *præcox*, 0.41; manic-depressive, 0.31 (this becomes 0.42 if doubtful cases are added); epilepsy, 0.15; hysteria, 0.13; neurasthenia, 0.16; psychopathy, 0.38; eccentricity, 0.31.

The preceding studies are representative of a series of carefully conducted investigations, as a result of which it was hoped to obtain measures of the normal expectations of the several groups of psychoses. In the nature of the case, the sample populations were relatively small, in some cases not exceeding 500. Consequently the fluctuations due to chance alone must be of a very high order in such material. Many of the rates are based upon the appearance of only 1 or 2 cases of mental disease. In some of the samples there were no cases of schizophrenia, or manic-depressive psychoses, a result which may be ascribed with a high degree of assurance to chance alone. Considering the possibilities of such errors, the results are about as consistent as one could reasonably expect in such material. Thus in connection with schizophrenia, Klemperer found a 'corrected' rate of 1.4 per cent, compared with rates of 0.85 per cent according to Luxenburger and Schulz, 0.76 per cent, according to another study by Schulz, and 0.98 per cent according to Brugger, the latter result being for the general population of Allgäu. The lowest rates were obtained by Brugger as a result of two special censuses. These gave him 'corrected' rates of 0.41 and 0.38 per cent. In connection with manic-depressive psychoses, three investigations gave 'corrected' rates of approximately 0.41 per cent. Brugger's results for Thuringia varied widely from this, he having obtained a rate of 0.11 per cent.

Comparison with the corresponding data for New York State is very difficult, if not impossible. In obtaining general rates for

all forms of mental disease combined, the German investigators, following European custom, include feeble-mindedness and epilepsy. Furthermore, the concepts of psychopathy (except for those described as hospitalized) are so broad as to vitiate any possible comparison with the data for psychopathic personality, as defined in New York State. A further difficulty arises from the fact that the German investigators do not use the term 'expectation' in its strictly actuarial meaning. When we say of New York State, for example, that the expectation of mental disease is 4.7 per cent for males, we mean that of every 100 males born in that State, 4.7 may be expected to be treated for some mental disorder in a hospital before the generation passes away. The expectation is not constant, but, after a short rise following birth, decreases steadily. The German rates cannot be interpreted in this manner, however. Though they attempt to provide a measure for a generation, they apply more nearly to a specific period. Even within these limits, the German method suffers from a lack of precision, inasmuch as it does not give adequate weight to the continually varying rates of both mortality and mental disease in relation to age within the specified period. Thus, because of differences in definition with respect to the criteria of mental disease, and differences in the statistical treatment, it is not possible to make direct comparison between the data for Germany and New York State.

The purpose of the German investigation however was not to make international comparisons, but to permit of comparisons with specialized family groups in Germany. Thus, by comparing the incidence in the latter groups with the norms established for the general population, it was hoped to obtain a measure of the influence of heredity. The most important of these investigations is that by Rüdin with respect to dementia præcox.<sup>20</sup> His principal findings may be summarized as follows. He studied the families of 701 patients with dementia præcox, the parents of the patients being themselves free of dementia præcox. Correcting for mortality and morbidity, in the manner already described, he found dementia præcox among 4.48 per cent of the siblings of his probands. He also found other psychoses, amounting to an additional 4.12 per cent. The norm for dementia præcox was suggested by Luxen-

burger as 0.85 per cent for dementia præcox, and 4.39 per cent for all psychopathic states combined. It is therefore clearly evident that the incidence of mental disease among the kindred of patients with dementia præcox far exceeds the normal expectation in Germany. Rüdin considered the consequences of other types of mating. When one parent had dementia præcox and the other parent was mentally sound, 6.18 per cent of the siblings of the probands were cases of dementia præcox, and 10.30 per cent had other psychoses. When one parent had any psychosis, other than dementia præcox, 8.21 per cent of the siblings had dementia præcox, and 8.21 per cent had other psychoses. When both parents were alcoholic but not psychotic, the siblings included 7.80 per cent with dementia præcox, and 5.20 per cent with other psychoses. When one parent had a psychosis other than dementia præcox, and either of the parents was alcoholic, then 15.78 per cent of the siblings of the probands were cases of dementia præcox, and 7.89 per cent had other psychoses. When one or both parents had a psychosis other than dementia præcox, and one or both parents were also alcoholic, then 14.81 per cent of the siblings of the probands were cases of dementia præcox and 7.40 per cent had other psychoses. When both parents were mentally diseased—the presence or absence of alcoholism being disregarded—then 22.72 per cent of the siblings of the probands had dementia præcox. When both parents were free of any psychosis, or of alcoholic taint, but an uncle, aunt or other relative of the proband was affected, then 8.07 per cent of the siblings had dementia præcox and 6.83 per cent had other psychoses. It is thus clear that not only is the expectation of mental disease higher among siblings of patients with dementia præcox, but the expectation increases with the severity of tainting among the parents, and is related intimately to the prevalence of alcoholism. The biological significance of such data is enhanced by the fact that of 498 step-brothers and step-sisters of the probands only 0.56 per cent had dementia præcox and 1.70 per cent had other psychoses.

(TO BE CONTINUED)



## BOOK REVIEWS

**Introduction to Comparative Psychology.** By R. C. WARDEN, T. N. JENKINS, and L. H. WARNER. 581 pp. Ronald Press, New York, 1934.

The present volume, which the authors announce as an abridgement of a larger work soon to be published, is an attempt to summarize the methods and results which the stimulus-response approach to the study of behavior has achieved in the comparative field. Those brought up on Romanes, Darwin, Lubbock, and even Lloyd Morgan will, accordingly, look in vain for familiar methods and modes of observation. On the other hand, the reader will learn much about electric grids, triple plate problems, chemoreceptors and action systems, and facts generally only found in textbooks of experimental zoology.

The authors have almost entirely discarded, at least in theory, such terms as "habit", "instinct", and "emotion" in the historical psychological sense. In their places we have orientating behavior and bio-electric action systems, photoreceptors and statoreceptors, etc.; the latter exemplifying the receptive, the former the reactive capacities. These two subdivisions are the basic categories into which the authors have attempted to classify all behavior. In general, the receptive capacities include the sensory perceptual mechanisms of the organisms, the reactive capacities, its secretory motor responses. The major portion of the book (the last 18 chapters) is devoted to an organization of available data in the field under these categories. The various classes of the animal kingdom are taken up in systematic order beginning with the lowly protista and continuing upwards, through the principal sub-orders, to the primates and man. The first eight chapters are introductory, covering a brief historical survey, descriptions of various experimental methods, and a detailed presentation of the authors' own orientation and scheme of classification. A rather large chapter is devoted to comparative morphology.

The greatest excellence of the book is its systematic presentation of current methods and results in the field of animal behavior, the authors having gathered between comparatively narrow covers a large body of data, a good portion of which is still scattered in periodic literature. Its limitations are, in part, due to the point of view adopted, which is so behavioristic that little psychology in the usual sense of the term will be found; and, in part, to the schematized presentation of the material. All in all, the usefulness of the volume should be more that of a reference text than an introduction to the subject. It should be noted that the present volume is written by the senior author alone (Warden).

DAVID WECHSLER.



**Mental Defect.** By LIONEL S. PENROSE, M. D. 205 pages. \$2.50. Farrar and Rinehart, Inc., New York City.

This book, by an English author, might be considered a textbook on mental deficiency. The legal references are not entirely applicable in this country, but the biological and sociological approach is similar to that with which we are familiar. The scientific style of the book makes it more suitable for the profession than for the laity, although it is designed for both, and an appended glossary will aid the latter who are not acquainted with the technical terms.

Dr. Penrose reviews the history of the study of the mentally deficient, presents the physical and psychological aspects, and critically summarizes the research in both fields. There are 60 pages devoted to a discussion of the clinical types, which are presented in a readable review of the etiology, as well as the symptomatology.

The author devotes a chapter to the classification of mental defect. He emphasizes the difficulties encountered in developing a scheme suitable for administrative purposes, and also descriptive of the biological and pathological aspects of the individual case. The classification according to "congenital or acquired" and Tredgold's grouping of "primary and secondary" is considered unsatisfactory, as failing to meet the above standards. Lewis' grouping as "subcultural and pathological amentia" is accepted by the author as a more practical classification. The pathological group is readily understood. The subcultural appears to comprise the physically normal types of feeble-minded. It is a physiological group as compared with the above mentioned pathological. The subcultural group appears to correspond fairly closely with the type commonly referred to as the familial, but it is not necessarily of hereditary etiology. The author finally admits that any simple classification is unsatisfactory, as there is overlapping and a more complicated scheme is required to adequately classify and describe all types.

Treatment comprises the writer's last chapter, and this is followed by a 22-page chapter on the treatment in the United States, as set forth in a White House Conference report on the Handicapped Child. This is mostly a repetition of the author's observation, and was evidently added by the publishers to popularize the book. Dr. Penrose stresses the importance of treatment from a social standpoint, society being organized to absorb the mental defectives who will always be in our midst, in spite of the over-rated relief anticipated from sterilization laws.

ARTHUR W. PENSE, M. D.

**Human Nature and Management.** By ORDWAY TEAD. 338 pp. McGraw-Hill Book Company, Inc., New York and London. 1933.

The author is a lecturer in personnel administration at Columbia University. In the preface, he states that the book tells how to use psychology in managerial work and he defines three purposes as follows: "First, to set forth the essentials of modern psychology and show the point of view it implies toward problems of human relations; second, to help the reader to improve the conduct of his own mental life; and, third, to show concretely the methods and procedures which are psychologically sound in the management of people."

The first nine chapters are devoted chiefly to the first and second purposes mentioned above. In Chapter I the question is asked "Can psychology aid in management?" and the answer is in the affirmative. Then, in later chapters, follow discussions on behavior, instincts, the use and control of emotions, forming and changing of habits, the learning process, how to encourage reasoning, the meaning of will and personality and defense mechanisms. The material is presented in a very readable form with numerous examples to enable the reader to grasp the exact meaning. The reader will receive many valuable suggestions concerning his own mental processes.

Chapters X to XIX are devoted to the application of psychology to administration. The differences in purposes between manager and worker and between different groups is discussed and integration is advised as the remedy. Integration is defined as "the process of discovering out of the divergences of group purposes those new methods and procedures which are found to compose group differences by yielding a new purpose—one which the several groups find satisfying because in harmony with what they really want." The difference between compromise and integration is explained. The essentials of creative leadership and the factors necessary for the building of morale are discussed. Group action under skillful leadership is regarded as essential to integration.

The use of psychology in the selection of employees is considered. A chapter is devoted to "The Technique of Training," and another to "Arousing Interest and Supplying Incentives."

The old discipline is contrasted with the new—the autocratic with the democratic—and the conclusion is reached that with gradual preparation and education a group may be safely trusted to discipline its members and that many advantages will be found in the democratic form as compared with the autocratic.

Those engaged in or interested in directing the activities of groups of workers will find many helpful suggestions in this book.

W. R. WEBSTER.

**Studies in the Dynamics of Behavior.** By C. P. STONE, C. W. DARROW, C. LANDIS and L. L. HEATH. Edited by K. S. Lashley. 322 pp. \$5.00. University of Chicago Press, 1932.

The studies collected under this title consist of three distinct monographs whose value is rather difficult to appraise as their contributions are only slightly connected with the problems which the editor (K. S. Lashley), in the introductory preface, sets out as their objective. The first is a "Study of Wildness and Savageness in Rats of Different Strains," in which the author (C. P. Stone) has investigated these traits and their opposites (timidity, etc.) by means of a carefully devised rating scale, supplemented by a further study of the dominance of the hunger over the hiding tendency in the various strains, and still another on the influence of timidity and mildness on the maze learning ability of these animals. The various strains of rats were found to differ significantly as regards the traits considered, but not so as regards learning ability when "systematic handling and strong hunger motivation" were used to allay the animals' wildness and timidity tendencies.

The second monograph (by C. W. Darrow and L. L. Heath) and the longest in the volume, is an attempt to study "Reaction Tendencies Relating to Personality" through sought correlations between personality tendencies ascertained from personal data questionnaires (Thurston Neurotic Inventory, et. al.,) and data of physiological reactivity (electrical skin responses, blood pressure, respiration), obtained from the same subjects. A great many correlations were worked out, but the researches, though carried out with unusual thoroughness, gave results which were, so far as the main problem is concerned, essentially negative. The investigation, however, makes some important contributions to the physiological technique.

The last monograph (by C. Landis) is an attempt to study "Emotional Traits in Juvenile Delinquency" with methods similar to those of the preceding study, except that different types of personality schedules and tests, and measures of physiologic responsiveness (stabilometer, pursuitmeter and electro-tachogram) were employed. Several hundred delinquent boys and girls were examined with these tests and questionnaires purporting to be diagnostic of emotional and personality traits, but again neither tests nor questionnaires gave consistent or significant results. The conclusion of the author is that at present experimental methods are not adapted to the investigation of personality traits. This is borne out by the results obtained, but considering the inadequacy of the criteria employed, the generalization seems much too wide for so limited an experiment.

DAVID WECHSLER.

**Training in Psychiatric Social Work (at the Institute for Child Guidance 1927-1933).** By SARAH H. SWIFT. 177 pp. Price \$1.75. The Commonwealth Fund, New York.

For the last 20-30 years, it has been recognized that professional equipment for social workers was desirable. It was felt all available tools known to the experienced social worker should be given to the individual who is to cope with the intricate problems of human beings in their adjustment to each other and to society. Just what should constitute this training or how the student social worker should obtain these skills has been a much considered topic, but for the most part little has been written on the subject. In the last few years it has not been difficult to provide ample theoretical background for the student social worker, but to provide experience for him so that he may learn to use his theory wisely has been difficult. The crux of this problem has seemed to hinge chiefly on the supervision given the student when he has his practical experience with cases if he is to learn to translate his theoretical knowledge into skill in social work procedure.

The art of training and supervising has been widely discussed by both the faculties of schools for social work and the experienced worker who has a number of inexperienced social workers under supervision. Unfortunately, the result of such discussions has not been made generally available to the number of workers in executive and supervisory positions who might derive benefits from it.

Miss Swift's book, "Training in Psychiatric Social Work", is particularly useful at this time because it meets this very need. It gives one an objective evaluation of the experience of students in training in social case work in a psychiatric setting. Miss Swift's chapters on "The Utilization of Case Material in Training", "Group Conferences on Cases: Training Values" and "The Supervisor and Student", are particularly valuable to the case worker who has inexperienced workers under her supervision. The chapter, "Supervisor and Student" is particularly helpful. It shows the possibilities for the student to increase his skills in case work with the guidance and constructive criticism offered under supervision and reveals the value of the supervisor-student relationship in developing the student's case work, thus enabling him to work out a much more mature approach to the patient's problems. Since the Institute for Child Guidance concentrated its efforts to such an extent on the training of various professional groups it is felt that the philosophies evolved and the general techniques of approach to this problem make its contributions of great value to all of those engaged in social case work. Social workers are grateful to Miss Swift for her ob-

jective narrative of the general approach of the Institute to the training of social workers, some of the problems met with, the methods used and the general policies evolved. "Training in Psychiatric Social Work" is a readable and ready reference volume which will be of use to all social workers interested in the development of their staffs.

HESTER B. CRUTCHER.

**New Introductory Lectures on Psychoanalysis.** By SIGMUND FREUD.  
Translated by W. J. H. Sprott. W. W. Norton & Company, Inc., New York, 1933.

During the past decade and a half Freud has not only amplified some of his earlier formulations, but he has contributed greatly to the development of added conceptions. Those who found it desirable to keep apace with his many communications as they originally appeared must have found it as difficult to envisage their basic meanings as Freud himself found it to be. Indeed, throughout Freud's works one gets the feeling that he must have labored severely before he brought out his formulations. It is no less evident, also, that he has since experienced many tribulations; he says so himself. Therefore, in this present book he stops off, as he has done before, to survey his entire psychoanalytic discipline, placing special emphasis upon the developments of the past 16 or 17 years.

In this communication he is able to do what few of his colleagues have done, namely to write in a clear, simple and easy style. It is as though he were discussing *vis-à-vis* some of his fundamental concepts; one reads and feels the person Freud; that is to say, he has personalized the lectures, but the feeling is not created that you must accept his ideas; on the contrary, his attitude is inquisitorial; he would like to know if your own clinical experiences may be better understood in terms of psychoanalysis. He possesses the courage to express himself vividly, but he also invites others to join him in a critical estimation of his productions.

It not infrequently happens that when an author has completed the body of his book, he surveys the work from a distance and, with the new perspective thus created, he writes a preface. It is from the preface that the reader often gains the best orientation. These "New Introductory Lectures on Psychoanalysis" are, as the name implies, introductory or prefatory. For those who are about to enter upon a study of psychoanalysis, but also for those who have not recently stopped off for a general evaluation, this series of communications should prove quite valuable.

L. E. HINSIE.



**Attorneys Textbook of Medicine.** By ROSCOE N. GRAY, M. D. 856 pages.

Matthew Bender & Company, Albany, N. Y.

Although Dr. Gray, who is surgical director of the Aetna Insurance Company, has prepared his book with the attorney mainly in mind he has produced an attractive volume which can profitably be read by physicians. To the layman it is a mine of useful information and it should prove of considerable value to social workers and nurses. Anyone who wishes a general picture of the topics covered by the book will find it of value. The volume is not to be thought of as a complete compendium of medical and surgical diseases and the mental hygiene aspects of illness have not had the attention they merit, but within its scope Dr. Gray has produced an excellent book and nice things can properly be said for what he has written. The omissions, however, are not easily understood. To the reviewer it is difficult to see in a book prepared for the adjudication of compensation cases how an attorney can be left uninstructed in the neuroses. Nevertheless, it is a good book.

If purchased by a physician who devotes himself to medico-legal work he will not find therein directions which will tell him how to conduct himself in the court room, how to get out of difficult situations or how to make a bad case look good. That would be too much to expect even from Dr. Gray.

PARSONS.

**The Spastic Child.** By MARGUERITE FISCHEL. 96 pp. Price \$1.50. The C. V. Mosby Company, St. Louis, Mo.

This book should prove valuable to all parents of spastic children as it presents in an interesting and non-technical form a great deal of information concerning spastic paralysis and its treatment. It not only outlines a definite routine to follow for those parents who might undertake the task of home treatments; but to those parents, who prefer treatment by a physical therapist under the direction of a recognized orthopedic physician, it gives a good appreciation of the seriousness of the disease, what should be expected in the type and length of treatment, and what the parents cooperation should be.

All authorities will not agree with everything that Mrs. Fischel recommends but they will undoubtedly agree that the fundamentals of relaxation and muscle coordination are right. As the book states, this is the record of only one child, and as spastic cases present various difficulties, the material is offered suggestively and should be adapted to the individual problem. Mrs. Fischel is to be congratulated on her courage, perseverance and intelligence in working out a program which has brought ultimate success, but only after years of labor and self-sacrifice.

LOIS A. WHITFIELD.



**Who Shall Survive? A New Approach to the Problem of Human Interrelations.** J. L. MORENO, M. D. Nervous and Mental Disease Publishing Company, Washington, 1934.

The contents of this book represent special studies made by Moreno in an effort to place a more definite value upon those emotional qualities that arise from the interaction of groups of people. The researches are intended to form a contribution to group psychology. The observations were made upon individuals in institutions—public schools, a training school for delinquent girls and a so-called neighborhood house. Moreno also draws upon his experiences in other communal situations.

Special stress is laid on the necessity for a better understanding of the forces that enter into the origin and development of group life and until one is able to define with reasonable accuracy the meanings of organized groups, it is the belief of Moreno that therapy cannot be adequate. Moreno believes that analysis of the individual (e. g., psychoanalysis of Freud) contributed much to the understanding of the individual, but apparently he would not endorse its applicability. His treatment would leave the individual just as he finds him; at least he would not subject the individual to any active psychotherapy. It appears that Moreno would treat him by what he calls "assignment therapy," that is, by placing him in known groups. Obviously Moreno engaged in a lot of activity, watching the various members of groups, shifting them from one place to another, finding out whom they liked and disliked and he felt that, as a result of it all, he could measure the psychology of a group, much in the manner that one measures the intelligence of an individual. He uses the phrase "socionomy" to mean "a science which is concerned with the psychological properties of populations and with the communal problems which these properties produce." When this "science" is expressed mathematically, the term "sociometry" is used.

The book contains a lot of new words and phrases, "technique of freedom", "spontaneity therapy", "psychological geography of a community", "social atom", "population test", "sociosis", etc., etc., and many sentence formations (or are they ideas?) that are new and difficult to understand. Maybe the lack of clearness is due to the unfamiliarity of the reviewer with the ideas that Moreno intends to establish.

The reviewer looked carefully for any new helpful hints that he might be able to put into practice, because Moreno talks about treating people via the environment—a topic that should gain the attention of those who treat people. The hints were not found.

Sometimes we gain a glimpse of what a book is all about when the author writes a preface; but Moreno did not write a preface to this book and until

he gets far enough away from the minute details to make a brief and clear statement of his premises, it is doubtful whether we shall know "Who Shall Survive?"

L. E. HINSIE.

**Medicine Man in China.** By R. GERVAIS. Translated from the French by Vincent Sheean. \$2.75. Frederick W. Stokes & Co., New York.

This book, a translation from the French, was written by a physician in charge of a hospital under the direction of a missionary branch of the Catholic church in an inland city in China. Medical topics are discussed but many other topics relating to social life in the district are touched upon in clear, interesting and amusing style. The things told about brigands, cholera, Chinese warfare, family relationships, local government, etc., are amazing and at times almost incredible. For example, an epidemic of cholera broke out in the town and the residents were dying at an appalling rate. The physician approached the Chinese governor and suggested certain measures to control the epidemic, stating that perhaps as many as 200,000 lives might be saved by these steps. The governor on hearing this said that no such steps should be taken under any circumstances. There was too little food as it was! The epidemic ceased only with the coming of frost. Again, the physician wished to do dissection in the medical school for the instruction of his students. Soon after he started the population mobbed the school and dissection had to cease. However, the ruling general manifested much interest in the subject and marched a captured bandit to the school and suggested dissection of the living subject! The populace did not object to this procedure in the least. It was only the dead who should not be defiled. A resolute stand convinced the general that his plan was not feasible so then he had the bandit shot on the spot. There are many statements of this surprising nature in the book. Its free journalistic style might cause one to question the veracity of some of the statements it contains but the setting makes the material more convincing. The book indicates the trials of the medical practice in a superstitious semi-civilized race who has a distinct culture of its own. It indicates that for the successful practice of medicine and enforcement of public health measures much knowledge and cooperation on the part of the public are essential. The book likewise gives a realistic picture of one side of Chinese life which may well supplement many other books about China written from a different point of view.

BROWN.

**500 Delinquent Women.** By DR. SHELDON GLUECK and DR. ELEANOR T. GLUECK. Alfred A. Knopf, New York. 539 pp. Price \$5.00.

This volume, the second on the research of the authors regarding the adjustment of individuals after release from correctional institutions, is another important evaluation of the effect of the treatment of offenders against the law.

The first chapter gives a resumé of the present knowledge regarding delinquent women from the historical standpoint, the size of the present problem, traditional efforts to wipe out crime, the aims of the Women's Reformatory Movement with special emphasis on the methods used at the Massachusetts Women's Reformatory, inasmuch as the 500 cases studied had all been inmates of this institution.

Chapter 2, "A Gallery of Women," gives various types of delinquents dealt with in the institution. The authors have adopted the rather interesting method of giving the case stories of these "typical" women before their commitment. They then give a statistical summary of the color, nativity, physical development, social setting, education, industrial history, marital history and conflicts with the law previous to commitment of the 500 women studied. The story of the "typical cases" is then continued through their institutional experience and parole period.

The authors then give a statistical report of the adjustment of all of the 500 women while on parole. Some interesting material is revealed in this tabulation. Twenty-four of the 500 were committed again to penal institutions, 34 had died, and 27 others went to State hospitals and State schools for the defective or other non-penal institutions. Of the remaining 412, the authors found that after incarceration in the reformatory the average wages were better, work habits had improved and, on the whole, economic responsibilities were met by 80 per cent of them. There was quite an increase in the number who seemed to have forsaken undesirable companions—approximately one-third are reported to have desirable companions and desirable haunts after their institutionalization while before approximately 97 per cent of them had undesirable companions and were frequenters of undesirable places. It was found that there was an increase in professional prostitution after the inmate was discharged from parole but a decline in the number of illegitimate children and a decline in the number of arrests. Whether or not this was because the women learned a certain technique in avoiding conflict with the law or whether their behavior was less flagrantly anti-social, is not known. While the reader is delighted to note the improvement, he can not but wonder if the increase in the age of these women working (since in the late teens and early 20's increase in age usu-

ally is an asset realized in better working adaptability and skills) is not a factor which should be considered in noting the increase in wages. One wonders also if wages in general might not have increased in that locality during the period studied.

It was found on the whole that the women adjusted better while on parole than after being released from parole. It was also found that offenders who were visited at an early date and frequently thereafter by the parole officer showed a decreased tendency to repeat their former delinquent behavior, which would seem to confirm the opinion that social case work has a definite contribution to make in the delinquent's adjustment.

The authors conclude that the pure scientific approach to this problem will be the only way in which crime may be lessened and delinquents may be able to adjust better to society. They make a number of suggestions as to leads which should be followed up in classifying delinquents in their institutional treatment and in their after-care in the community. The authors' comment is "Psychology, psychiatry, social case work and educational practices have not as yet reached a very high degree of effectiveness though happily they seem ever to be improving."

The appendices comprise about one-third of the book. In this, the method of research is described in detail, the definition of terms, the outline for the history which was secured of the offender, and the outline of the evaluation of her social adjustment after her connection with the institution ceased. The appendices will be of interest and suggestive to those who are making similar studies, even though such studies are made on a much more modest scale.

The book itself is very interestingly written. The human element and the importance of human relationships in the adjustment of the delinquent is given adequate attention. It would be fortunate if a number of studies similar to these made by the Gluecks could be made of individuals who pass through non-correctional institutions so that one might evaluate institutional treatment and its effect over a period of years.

HESTER B. CRUTCHER.

**Mental Hygiene for Effective Living.** By EDWIN A. KIRKPATRICK. D. Appleton-Century Company, Inc., New York. 381 pages. Price \$3.00.

This book, the outcome of courses of lectures of the Harvard-Boston University Extension Service, consists of case histories written by students, discussions by the author and a set of questions following many of the chapters. The author has written books in the past on a wide range of topics, including "Fundamentals in the Making", "Educational Sociology", "The

Use of Money", "The Sciences of Man in the Making", "Conduct Problems", etc. In the preface of this book he states that he uses as a background "Facts of physiology, anthropology, sociology, psychology and education." Surely as a background to mental hygiene these subjects are merely secondary to psychiatry! The national Committee for Mental Hygiene is celebrating its 25th anniversary the year this book appears, but in the text neither Clifford Beers, its founder, nor Adolf Meyer, who suggested the name Mental Hygiene, is mentioned.

However, without drawing too fine lines about the use of terms, the test of the book after all is its subject matter. The text covers a wide range of material in the following chapter headings: Mental Health and Problems of Adjustment; Commonality, Individuality and Normality; Combinations of Factors Favoring Normal Adjustments; Conditioning Experiences and Mental Health; Stages of Maturing and of Widening Environment; Development of a Conscious Personality; Foundations of Efficient, Healthy Living; The Unconscious, the Abnormal and Freudianism; Psychology of Normal Integrative Activities; Promoting Healthful Adjustments to Conventions; Mental Health Norms; Social Mental Hygiene and Modern Life; The Schools and Mental Hygiene; and Diagnosis and Correction of Maladjustments.

The case histories presented are not case histories in the psychiatric sense and some of them are fragmentary and not fully convincing. Freudian concepts are reviewed in a necessarily hasty way. The chapter headed "Diagnosis and Correction of Maladjustments" deals briefly with these problems from the standpoint of mental hygiene. In this chapter, many problems belonging to the field of psychiatry are mentioned, but they are not discussed from a psychiatric viewpoint.

In a book of this kind the use of the term, mental hygiene, without certain explanations or acknowledgments may be questioned. Mental hygiene, however, is a broad subject and a portrayal of its implications from a psychological and educational point of view is desirable. In defense of the brevity of the treatment of some of the topics it must be recalled that this course was for persons who probably were approaching the subject without much previous preparation and had to be given in popular style. Karl Menninger probably never intended his book, "The Human Mind," as a college textbook, but as recommended for use in this course it may stimulate an interest in mental hygiene. A book of this nature would be of greater value if less scope were attempted and if it did not give the impression of being somewhat hastily put together. The book is indexed and selected references for reading follow each chapter.

BROWN.



**Organization for Social Welfare.** By GEORGE B. MANGOLD, Ph. D.  
494 pages. The Macmillan Co., New York.

This book is a treatise covering many phases of social work. It discusses the development of social work from its earliest beginning in the past, when it consisted of unorganized and mutual helpfulness between neighbors in small localities, and traces it up to the present, showing how the present organization sprang from these early efforts. It points out the early and present defects in methods of welfare work, and shows how they might be improved or corrected.

The book is divided into three parts. The first part, "Evolution of Social Work," takes one back to the early Babylonian, Jewish and Roman history, and points out that the humanitarian motive existed from time immemorial. The Mosaic Code set forth certain obligations on the part of all unfortunates. Later the Christian religion made it an obligation to serve. The weak point, however, in sectarian social work has been due to the tendency to give help at the price of religious enslavement. It then goes on to trace the evolution of both public and private welfare and social work in the United States. As the country grew in size and large industrial units developed, it became increasingly evident that certain localities were not to blame for increased needs of welfare work. In fact, they were totally unable to cope with it, so that it was considered first a county problem, then a responsibility of the state, and more recently the federal government has recognized its share.

The second part, "Organization in Special Fields", deals with the present methods of individual, family and community welfare work, embracing the problems of children, adults, parents, and so forth, with chapters on "Social Hygiene", "Medical Charities", "Psychiatric Social Work", and many other allied subjects.

The third part has to do with organization for general service, and discusses the various political or state-controlled welfare activities, such as city and county welfare departments, children's courts and their welfare departments, parole departments, and the various charities to which the government contributes. The author points out the great danger of welfare appointments, parole offices, and so forth, becoming political prizes without regard to the experience and training of the appointees.

One might criticize some of the statements in the chapter on "Psychiatric Social Work." Like many sociologists, the author indicates a superficial knowledge of the importance of the psychiatric social worker in connection with the insane. He notes that "the agencies handling the psychopathic, neurotic, and slightly abnormal will offer a more fruitful field for the psychiatric social worker than does the hospital for the insane," that "at best



the number of the insane who can be reclaimed is comparatively small." Why single out the insane? The number of normal individuals outside who can be perfectly adjusted is comparatively small. Again, in discussing the parole of insane from an institution, he states that "the purpose of parole is to make possible the return of the patient to the institution without the necessity of recommitment." As any institutional worker knows, this is the very least of reasons for a parole period. The insane inmate who has made a satisfactory adjustment in the hospital is placed on parole because of the realization that he needs something to cling to when he goes back to the old surroundings. During the parole period his chief hold upon the reality which he gained in the hospital is through the social worker who visits him and who is familiar with his particular problems.

The author devotes but little space to the growing importance of mental hygiene and child guidance clinics in the community. However, he has done an immense amount of work in compiling the book and it should be of great value to all social organizations, to those about to organize welfare work, and especially to the worker in any line of social endeavor.

STELLA P. KAMINSKI,  
Wassaic State School.

**A Common Faith.** By JOHN DEWEY 87 pp. The Terry Lectures. New Haven, Conn., Yale University Press. \$1.50.

Anything from the pen of John Dewey, professor emeritus of philosophy of Columbia University, author of important contributions on progressive education and one of America's foremost philosophers, commands the attention of the thoughtful person. The present small booklet of 87 pages is Dewey's lectures at Yale constituting the 11th series of the Terry Lectures. This lectureship was endowed by the late Dwight Harrington Terry of Plymouth, Connecticut. The endowment provides for a lecture on religion in the light of science and philosophy. Dr. Dewey approached his subject in a straight-forward manner and his thesis is that a distinction should be made between religious feelings which fill a need in the mind of many persons and religion insofar as the latter deals with the supernatural. He believes that religion should divorce itself from the supernatural in order to fill the place it should take in the modern world and to retain its contact with religious persons who cannot accept many of the older concepts. Dr. Dewey's frank attitude is the result of a conviction that a religion based too exclusively on supernatural origins fails to satisfy human demands at the present day.

BROWN.

**L'Amour et la Haine.** By PIÈRE JANET. Éditions Médicales. Norbert Maloine. Paris, 1932.

Professor Janet occupies the chair of psychology at the Collège de France, and this book represents his lectures during the academic year 1924-1925. The chapters are reproduced from lecture notes taken by one of his students, Miron Epstein. The book has all the engaging qualities of presentation that are associated with the author's writings and lectures.

Readers accustomed to English and American methods of treating psychological problems will miss the laboratory or experimental technique. Neither will they find the type of method associated with McDougal's discussions of social psychology. The French method, as illustrated by Janet, leans heavily upon the analysis of the behavior of abnormal individuals. It is the psychiatric approach, par excellence. Janet's case material is drawn wholly from his hospital and private practice. Such a method may be of great practical utility, and recalls Binet's suggestion to the effect that the study of abnormals may throw much light upon similar processes among normal individuals. This is due to the fact that psychological processes appear simpler among the abnormals, and that they are more easily subject to controlled observation.

The book is divided into two parts. The first is devoted to a study of the elementary sentiments or feelings, and of the types of social conduct to which they lead. These feelings are characterized as effort, fatigue, anguish and triumph. The two latter may also be termed sadness, and joy, respectively. The social tendencies are resumed under the headings of sexual modesty, imitation, order and obedience, and individual conduct. Part II deals in detail with the contrasting sentiments of antipathy and sympathy, and love and hatred.

As in all of Janet's works, the reader will find a great variety of descriptive and interesting case material, and a wealth of theory. The psychiatrist, especially, will find valuable discussions of delusions of persecution, obsessions, sexual perversions, autism, and psychoanalysis. An extended discussion of these does not appear necessary in this review, as the whole of Part I of the present work has been incorporated in another and more extensive work, "De l'Angoisse à l'Extase," and Part II is to be dealt with at greater length in a forthcoming volume on the social and religious sentiments. Readers will derive intellectual stimulus from this volume, which is at once an introduction to and a summary of the subject.

MALZBERG.

**The Case for Sterilization.** By LEON F. WHITNEY. 309 pages. Frederick A. Stokes Company, New York. 1934.

This book is frankly propaganda for voluntary sterilization. Its author, who is director of the American Eugenics Society, says it is "no 'neutral' book, but advocacy of a worthy cause." Its aim is to educate people generally so that "they can form their own beliefs and direct legislation wisely only on the basis of the discoveries and the opinions of the scientists." We should not, perhaps, expect the propagandist who is devoting his energies to a "cause" to adhere strictly to the opinions of the scientists, but in this case the author seems to have gone far afield at times, to have greatly over-emphasized the importance of his chosen method of achieving the desired end, and to have studiously, or perhaps blindly, neglected to give other methods due consideration.

An introductory chapter presents sterilization as "a burning issue today." It is followed by a description of the several types of operations with the author's reasons for rejecting most and for selecting vasectomy and salpingectomy as the most efficient and least harmful. Liberal use is made of the studies of Gosney and Popenoe in support of the contention that normal sex life continues unimpaired following sterilization. "Sterilization," it is said, "is the *kindest* operative procedure introduced since the discovery of anesthesia three-quarters of a century ago. Except for anesthetics, nothing else has the power of alleviating or preventing so much human misery." (p. 64.)

Chapters entitled "Degeneracy in the Making", "How Many Ought to Be Sterilized?", "Children Not Wanted" and "The Wrong Side of the Ledger" are replete with statistical and other data which lead, either by direct argument or by inference to the conclusion that "The best type in every social class must be encouraged to increase; the worst type—the defective, subnormal and dependent must be allowed to die out. That is what sterilization is for." (p. 186.)

A chapter on "The Relation of Mendelism to Sterilization" presents a number of interesting facts on heredity, and nearly 50 pages are devoted to "The Objections Most Often Urged" and to arguments against these objections.

Three appendices give a list of the technical papers of Gosney and Popenoe, tables of inherited characteristics in human beings and the number of sterilizations as of January 1, 1921, 1928, 1932 and 1933. There is a bibliography of 75 titles but, unfortunately, no index.

Anecdotes and parables and questionable assumptions and interpretations are subtly interspersed among statistical and other facts in support of the

thesis that contraception and sterilization are the *only* available instruments whereby social progress may be achieved in "a planned society." The interpolations are deliberately offered to the average reader, (whom the author places at the 13-year-old level of intelligence), as valid arguments in favor of sterilization, although, in the opening chapters it is stated that sterilization is no panacea for the ills of society. The glaring contradictions between the scientific data and the popular appeal detract materially from the value of the book. It reads like a cleverly manipulated political speech rather than as a serious attempt to offer a means of solving the most distressing of our social and economic problems.

The author completely ignores the work of the psychiatrist, the psychologist, the occupational therapist and those educators and vocational experts whose successes in the fields of mental and emotional adjustment and guidance are widely recognized. He assumes that the happiness and freedom from fear and the economic and social adjustment of the borderline classes, the morons, those who have recovered from mental diseases, the psychoneurotic and many other thousands of individuals are dependent *entirely* upon the extent to which contraception and sterilization, as the case may require, are made available to them. Even if the deliberate confusing of the issues of contraception and sterilization were warranted, there is a wealth of scientific data at hand which invalidates such an assumption.

The material is clearly and interestingly presented, but the book impresses one as an outstanding example of the point of view which G. K. Chesterton so well illustrates by the story of the man who, because he could not make the hats fit his boys, decided to cut off their heads.

FREDERICK W. BROWN.

**The Mother's Encyclopedia.** Compiled and edited by the editors of the Parent's Magazine: One-volume edition. 959 pages. Reynal and Hitchcock, New York, 1934.

This one-volume edition of "The Mother's Encyclopedia" can be more conveniently consulted and read than the four-volume edition issued in 1933. It is a compilation of articles on child training and the problems of parenthood which have appeared in The Parent's Magazine, condensed and brought up to date when necessary. The very complete index is so cross-referenced that almost any topic can be located immediately. The variety of subjects and the excellent organization of material make this book a worthwhile if not essential addition to any family library.

ELIZABETH S. THOMPSON.

**Chinese Medicine.** By WILLIAM R. MORSE, M. D., LL. D., F. A. C. S. Number 11, *Clio Medica*; A Series of Primers on the History of Medicine. Edited by E. B. Krumbhaar, M. D. Cloth. Price \$2.50. Pp. 185, with illustrations. Paul B. Hoeber, Inc., New York, 1934.

This small volume, one of a series under the general title of "*Clio Medica*" presents a special phase of "the long and complex history that underlies the great edifice of modern medical science." We have all heard of the many curious methods used by the Chinese, in the treatment of the sick; returning travellers, missionaries and such have brought back from the east unusual stories, sometimes too bizarre to be believed.

China has a history, extending for more than 30 centuries into the dim and distant past and it is assuredly true that the various tribes and clans finally emerging as China must have a far greater antiquity, so it is interesting to have Dr. Morse, who is well qualified to do so, present a frank and critical exposition of the underlying philosophical beliefs and religious concepts on which their medicine rests.

To most of us the Yang and Yin, masculine and feminine, or creative and destructive forces, will not make appeal, but as we read through the chapters on Chinese natural philosophy, cosmogony and the Gods of medicine and lightly skim the bibliography of Chinese medical literature, we come to that which many of us have long wished to understand, the Chinese attitude toward anatomy, physiology and pathology. How do they arrive at a diagnosis? Of what does their *materia medica* consist and why have they taken up so many varieties of minerals, plants and natural parts in their pharmacopoeia? Here we learn why they ascribe virtue to the tiger's gall, and why they have prescribed parts of so many other animals.

Consult Chapter II on acupuncture or needling for one of the most interesting parts of the whole book.

Read many of the Chinese proverbs and other quotations facing the title page of each succeeding chapter. They are well worth the price of the volume.

Dr. Morse says, "The Keynote of Chinese diagnosis is the palpation of the pulse, entire dependence is placed on the pulse by some physicians but in most instances the better class add the aids mentioned below", and then follows: Inquiry, the history of the family, etc.; inspection, the color of the skin of the face, condition of the tongue, etc.; palpation, but this means examination of the pulse only. These are familiar terms to us all; however, they have not the same significance as ascribed to the words by us. The "diagnostic measures of Chinese doctors are meager, insufficient and ineffective and are based on the universal theory of cosmogony."



The reviewer, a disciple of Hahnemann, wonders why the Chinese, philosophers as they are, did not originate the principle developed by the great homeopath, namely, that "Likes are cured by likes", for they apparently did treat their patients along this method but missed the opportunity of revealing it to posterity. It is possible they transmitted it to the Greeks and other early writers from whom Hahnemann is said to have caught his first idea.

One may find himself ridiculing and sneering at their methods of treatment and their materia medica and impatient with them for not having progressed further in the many hundreds of years they have recorded observations on the sick. This little book, however, is quite revealing and if we pursue it to the end, it appears clear that the Chinese have been held back because of their peculiar philosophy, religions and mysticism.

GRAY.

**Survey of Public Health Nursing: Administration and Practice.**

By the National Organization for Public Health Nursing. 262 pages. Price \$2.00. The Commonwealth Fund, New York, 1934.

This publication gives the findings and resultant recommendations of the National Organization for Public Health Nursing based upon its comprehensive survey of representative public health nursing organizations throughout the United States.

Its object is to take stock and increase the effectiveness of a central and indispensable aspect of the public health movement. Emphasis is laid on the necessity for regarding public health nursing as simply one part of a unified program intimately related to economic, social and educational conditions.

Significant information is presented regarding the present-day status of public health nursing in its major objects: organization, administration, nursing program and performance of the nursing personnel. The auspices under which these agencies operate and their relationships with the community, with physicians and medical societies and with other social agencies are discussed.

The findings of the survey give a sound basis for the revision of present standards, indicate the need for criteria where none now exists, and show the importance of more intensive studies. The report is detailed, clear, concise and constructive. It should be of especial value to public health nurses, public welfare officers, executives and board members of departments of health and education and others interested in public welfare.

LYBYER.

**History, Psychology and Culture.** By ALEXANDER GOLDENWEISER, Ph. D. Alfred A. Knopf. New York, 1933.

Dr. Goldenweiser's penchant for philosophical and methodological consideration is developed at length in this volume, which includes a selection of essays published by the author between 1913 and 1924. The essays are conveniently grouped so as to present logical discussions of kindred topics.

The book takes its title from the leading chapter of Part I, which is devoted primarily to a discussion of determinism in psychological and social science. It is a penetrating essay, in which the conclusion is reached that determinism and accident are both integral features of human history. Other essays in Part I deal with such fundamental concepts of cultural anthropology as diffusion and convergence. Dr. Goldenweiser takes a sane stand in upholding the validity of convergence.

Part II is a very useful resumé for readers who may be lacking in first hand acquaintance with the works of the pioneers in cultural anthropology. The review begins with a consideration of the contributions of Bastian and Ratzel and follows with a devastating criticism of the evolutionary point of view as expounded by Spencer and Tylor. This is followed by a summary of the outstanding achievements of Franz Boas and his many pupils, now constituting the American school of anthropology. Individual chapters are devoted to more detailed discussions of the theories of Frazer, Levy-Bruhl, Wundt and Freud. While recognizing the literary skill and fertility of ideas represented in the *Golden Bough*, Dr. Goldenweiser, nevertheless, rightly deplores the methodological fallacy arising from the assembling of masses of data from utterly diverse regions and societies—data possessing little, if any, genetic relations. In such a scheme there certainly cannot be real psychological unity. The latter is more apparent in the works of Wundt, who brought vast learning and preparation in scientific research to his task. Goldenweiser recognizes the importance of Wundt's psychological contributions to the analysis of primitive culture by dedicating the present book to him. The author's treatment of 'Totem and Taboo' is not flattering to Freud. While there is undoubted exaggeration in Freud's analysis of psychological problems in the field of anthropology, as a method it seems entitled to more detailed consideration, especially in view of its influence on field investigators of primitive peoples, such as Roheim.

In Part III, appears a lengthy and detailed examination of totemism. This study is based on a comparative analysis of the tribes of Australia and of the north-west coast of America. As a summary of the problem, presented with great skill, the study will be of inestimable value to readers who have neither the time nor the inclination to search through the vast

literature of the subject. Whether the author's own theories as to the nature and origin of totemism will stand up, only time will show. It may be said, however, that he has succeeded admirably in presenting the problems in forms that permit of definite answers.

Part IV is primarily a critique of Durkheim's theories as to the origin and nature of religion. Durkheim derived religious sanctions from the nature of the social group, and ascribed only a secondary role to individual religious experiences. Goldenweiser, on the contrary, finds the essence of religion in these very individual and personal mystic thrills and feelings of exaltation.

It is evident from this cursory review, that Dr. Goldenweiser has prepared a book which is, for the greater part, of profound and stimulating value. It is therefore a source of regret to close with the statement that Parts V and VI, which conclude the volume, do not appear to reach the philosophical levels of the earlier chapters. Part V consists of two essays on race. Much—perhaps the greater part—of the literature bearing on race differences, and their relations to culture, may be regarded as utterly inadequate. It remains true, nevertheless, that the subject cannot be disposed of in the off-hand manner adopted by the author. He appears especially displeased with the results of mental testing, but until he presents evidence, rather than obiter dicta, as to the invalidity of such tests, it will have to be assumed that the results are of some significance, and do indicate differences which may be racial in origin. As to the consequences of such differences, these merit a study in themselves—one employing greater precision in methodology than Dr. Goldenweiser utilizes himself.

Part VI is a collection of four miscellaneous lectures, the most important of which is a discussion of Freud as a psychologist. As might be anticipated in view of the earlier chapters, Freud is handled none too sympathetically.

MALZBERG.

**Training Youth for the New Social Order.** By RUDOLPH R. REEDER, Ph. D. 248 pp. Price \$2.00. The Antioch Press, Yellow Springs, Ohio.

The author is old-school but new deal insofar as his educational ideals are concerned. Though quite verbose, at times even sentimental, he has succeeded in setting forth an excellent model for a whole program for the whole child and in outlining theoretical methods of training which have as their avowed intention the preparation of youth for social cooperation, for responsibility and for leadership in the changing world of today. He recommends that consideration be given, concomitantly, to the teacher personnel, to individual hereditary trends and potentialities, to the school environment

and to the fact that the child is an ever-growing, ever-changing human being. Under this Utopian régime school days, then, will be not so much a time of preparation for life as they will be a time of living a life that prepares.

To obtain the best results this educational program shall operate as one harmonious whole but in order to present it concretely yet intelligibly it has been approached from eight angles. To begin with, the training is based upon adequate physical care and the formation of sound health habits in the individual. Then, keeping in mind that one can get pretty much what one goes after in child training, efforts are made to first stimulate and then guide the urge to succeed, innate in every child. To further this end the author would have the reward system function so that each child, upon the basis of past achievement, would help set his own standard and would be rewarded for effort as well as for attainment. The importance of affection in the life of a child is stressed; also the necessity for a sound moral training. The play life is so devised as to give an opportunity for the development of initiative and for the expression of spontaneity; and an attempt is made from earliest years to inculcate a taste for good literature. Later a deliberate effort is made to teach the child how to use books. A practical training in the use of every-day tools and implements and work with wood and metals contributes toward the development of responsibility and self-confidence. A broad religious training completes the whole.

The goal of this training of the youth, the development of well-integrated, socially adjusted, harmoniously developed personalities, must at all times be kept clearly in mind. Unfortunately there is, in parts, a wide gap between the author's theory and his practical application. In working out his educational scheme he seems to have identified himself with the situation and to have based his theory upon those things which affected him most favorably in his own youth but at times he has failed to adapt these precepts to a changing world with its advances in mental hygiene and child care, i. e., no matter how efficacious in overcoming petty thieving his *Theft Book may have seemed at the time*, those of us who are trained psychiatrists know that such methods foster guilt, inferiority, and resentment, all of which leave irradicable scars upon a developing personality.

Whether one agrees in toto with Reeder's practice or whether one does not, it may be well to remember that he was in the vanguard of those responsible for the revolutionary changes in American educational methods, particularly in institutions, during the past quarter century. At the present time he is the director in charge of the Marsh Foundation School, Van Wert, Ohio.

CHARLOTTE MUNN.

**Big Problems on Little Shoulders.** By CARL RENZ, M. D., and MILDRED PAUL RENZ. 129 pages. Price \$1.50. The Macmillan Company, New York.

This small book of 129 pages by Carl Renz, M. D., psychiatrist, and Mildred Paul Renz, psychologist, may be recommended to parents of young children with safety and confidence. The word safety is used advisedly as some books on how to bring up children are either extremely unscientific, sentimental or otherwise objectionable. This book has none of these objections and sets forth the problem of the management of children in an intelligent, clear and instructive manner. It is true that the material is dealt with quite briefly. In this respect the authors have avoided the common mistakes of attempting to say too much. The book does not overwhelm the parents with theories and it does not go in for lengthy or obscure discussions. Clearly and attractively written the material covered may be gained from the chapter headings as follows: "I. A Little Girl and a Big Problem; II. A Memory Is Responsible for An Ailment; III. Learning to Behave; IV. Bad Little Good Boy; V. The Feeling of Inferiority; VI. A Small Nose Out of Joint; VII. The Ugly Duckling; VIII. The Attitude of the Parent Toward Sex; IX. The Child's Problem; X. Masturbation; XI. Sex Experiences of Childhood; XII. The Inevitable Hows and Why; XIII. Dreams Can Come True."

While a relatively large part of the book is given to attitudes about sex in children, this subject is properly presented. The material of the entire book deals with young children presumably of pre-school age and school problems are not touched upon. Physicians, social workers, nurses and others may recommend the book to young parents with the assurance that it imparts a desirable attitude concerning child rearing.

BROWN.

**The Slum and Crime.** A Statistical Study of the Distribution of Adult and Juvenile Delinquents in the Boroughs of Manhattan and Brooklyn, New York City. By IRVING W. HALPERN, JOHN N. STANISLAUS and BERNARD BOTEIN. Published for the New York City Housing Authority, 1934.

"The Slum and Crime" is the abbreviated and more striking title of this study. The investigation was suggested by the "New York City Housing Authority", as part of its study of slum conditions. In his foreword, Langdon W. Post, chairman of the New York City Housing Authority, writes that "No investigation of the slum conditions of its city would be complete without a thorough survey of the crime in its slums, in comparison with the crime in other areas" and he concludes: "Out of the slums comes crime."



The study is, therefore, an attempt to show by statistical and graphic treatment, the geographic distribution of offenders and of offenses in New York City—more especially in the Boroughs of Manhattan and Brooklyn. The data were secured from police and court records. As might be expected, the analysis disclosed that the distribution of crime is not haphazard but that there are distinct centers, especially in Manhattan, and that these centers coincide with slum areas, for the most part. The value of the study consists in the rigorous demonstration of this phenomenon.

There can be, therefore, no reasonable doubt that the slums and crime are associated. Is the relation causal? If so, it can hardly be direct, for, as the authors point out "while a considerable number of slum dwellers may commit crimes the remainder do not. The neighborhood environment for all is the same. The answer, course, is the individual." (page XVI.)

It is true enough, that in the slum areas, as everywhere else, individuals vary in capacity and character. But it is largely a matter of chance whether in a given environment one individual transgresses the law, whereas another remains law-abiding. In the complex of factors which determine an individual's standards of behavior and outlook on life, it is often impossible to isolate single causes, and to assign exact proportionate values to them. We may say that it is the cumulative influence of many factors that determine the standard of life in the slum, and that the inciting factor to crime in any particular case is largely a matter of chance or accident. It is the statistical result which remains fairly constant, in the midst of a flux of individuals.

The authors suggest methods of treatment and of prevention of crime. These are summed up in the concept of individual treatment, as exemplified in the application of the so-called 'case' method. It is doubtful, however, whether they have clearly grasped all the logical implications of such a method, and they make claims for it for which there is no sound evidence. Whatever the virtues of the case method may be, the investigations of the Gluecks have clearly shown that its application in the field of correctional treatment has not, up to the present, been attended with great success. It is better to admit that there is as yet no sure method of "individual" treatment of the criminal (especially in the field of prevention) and that it is, therefore, desirable to emphasize broad social measures of prevention, such as slum clearance, itself.

The study is a praiseworthy attempt at a specialized census of crime. Not the least valuable part is a series of admirable spot maps indicating the distribution of offenses and of offenders in the several areas submitted to analysis.

MALZBERG.

**The Child—His Origin, Development and Care.** By FLORENCE BROWN SHERBON. Price \$3.50. 707 pages. McGraw-Hill Book Co., Inc., New York.

This book of 707 pages by Dr. Sherbon, professor of child care and development, of the department of home economics of the University of Kansas, represents the result of 15 years of experience in this field and expresses mature thoughts of what the author believes her students should know about the child. The book constitutes a broad course of study for the responsibilities of parenthood. If the main facts it contains are understood by its student readers, they should indeed have received an excellent preparation not only for parenthood, but for better understanding of many of the problems of mankind.

The book is unusual because of the ground it covers. It deals not only with anatomy, physiology, biology and pediatrics, but also with personality development, educational problems, cultural considerations and other subjects as they are directly or indirectly related to the child. The approach therefore is to the child as a whole, an approach long stressed by psychiatrists. As the author is a physician, the organic side of the problem is fully brought out and in the developmental side much credit is given to Gesell's work. Many other authorities are referred to in the wide range of topics discussed.

The book consists of three parts: Part I, "Before the Child" deals with heredity, reproduction, anatomy, glands of internal secretion, fertility, hygiene of pregnancy and other subjects. Part II, "Enter—The Child," deals with the birth of the child, the first year, feeding, sleep, posture and other aspects of the hygiene of infancy and childhood. Part III, "Development, Behavior and Training", deals with the brain and its development, theories of behavior, locomotion, language, emotional development, growth, religious considerations and various other problems including a brief discussion of conduct disorders.

The subject matter is satisfactorily dealt with although one might feel that an attempt has been made to cover too much material in one volume. The author, however, emphasizes the fact that she wishes the book to stimulate an interest in childhood and the problems of parenthood and to be regarded as an introduction to further studies rather than a complete textbook in itself. The problems which arise in late childhood and adolescence are not discussed in any detail. Mental hygiene considerations of child care are very meagerly dealt with as such. In fact mental hygiene is mentioned on but two or three occasions, although much of mental hygiene value appears in the book. This volume affords a background which with collat-

eral reading should give the student a broad and liberal education in the field of child development. It deals with a subject of the highest value to society but it is not a book to be read casually as it requires a certain amount of scientific training in advance to be fully appreciated. If the coming generations are to approach parenthood with a better understanding than the past the sane viewpoint which a book of this nature imparts should furnish a useful guide. The author is to be commended on writing a book of such wide interest and value.

BROWN.

**Major Aspects of Personality.** By MAURICE H. KROUT. The College Press, Chicago, 1933.

"Major Aspects of Personality" is a 364-page book divided into a preface; 12 chapters; 3 appendices (of "Questions and Problems", "Notes", "Bibliography"); and an index. In the preface, the author states that he has "tried to bring together the contributions of biology, anthropology, sociology, and psychology and weld them together to form a theory of personality which has not, prior to this, appeared in the literature in just this way." Each chapter is subdivided into sections and a restatement occurs at the end. The first two chapters deal with "Race and Culture", and "Culture and the Individual." Racial difference is viewed more in the terms of group conflict and group organization, a cultural rather than a biological concept. Culture is seen as the process of patterning human behavior—or "the study of cultural types." Utilizing biological nomenclature, the author described three personality types; the variant, that maintains some consistency between group philosophy and practice; the hybrid, a discontinuous variant that diffuses or adapts borrowed culture forms to the prevailing forms; and the mutant, the genius-leader who deals with changes in fundamental patterns. Culture changes come from the interstimulation of personalities, the latter creating tension-situations demanding adjustment, and response occurring only in those in whom these tensions are created. Three chapters—"Individual Heredity", "The Individual as an Organism", and "Conditioned Behavior", outline conventional views.

A chapter on "The Organism and Its Behavior" relates that "responses may be acquired without teaching, but no responses, no behavior-pattern can come into existence without learning." Instinctivists assume fixity of form—a principle which is fictitious; assume that interests come in pairs of opposites; and disregard cultural influences and inter-personal contacts. Behavior, conceived in terms of organismic adjustment takes two forms; reflexes or catabolic "explicit responses depending on the somatic organization of the individual, mediating the relations of the organism as a whole

to the external environment"; appetites, or anabolic implicit responses, mediating the internal relations of the organism. There are no dynamisms, drives, urges, "There is only an organism changing, seeking balance and outer stimuli serving as means of releasing the energy patterns left by previous experience"—all this being "an objective conception of human behavior."

In "Conscious and Non-Conscious Behavior", the first portion is a brief review of earlier theories, and the latter half, the "subconscious redefined", asserts that where it is possible to use interchangeably the skeletal musculature and the verbal apparatus, a state of conflict may be manifested. "Unless the motor and verbal conditionings correspond to each other, and are alternately available, conflict is inevitable." "Conflict is simultaneous stimulation and excitation of the organism—a product of the ratio between inhibited and stimulated systems of response." Conscious activity represents an implicit attempt to resolve a conflict either through the reconciliation of the verbal and the motor responses, or securing organismic balance through the supplementation of the inhibited system of activity (verbal-skeletal) by the visceral system of response. "The repressed or inhibited system of response"—"becomes a subconscious activity", manifesting itself in— a) visceral motor, b) verbal motor, c) motor-verbal acts. Conflicts can also occur through disharmony, disuse or extinction of a behavior system.

"Behavior in its Symbolic Forms" is essentially a review of the fields relating to facial expression and general body mimicry, and "Obscure Symbolic Behavior" an extension of Freudian interpretation of the theme. "Appetitive Fixations", again reviews Freudian concepts of fixations and identifications, finishing with brief mention of personality types. "Personality and Behavior" emphasizes that, to be valid, the study of personality must be related to situation rather than the study of traits alone. Personality is "a system of persistent adjustments of an individual, evidenced in explicit and implicit responses. The final chapter includes "Outlines for the Study of Personality."

It is evident that the author has read widely. Numerous quotations introduce the names of many investigators in diverse fields of human behavior. These quotations possess value of themselves to which the author occasionally contributes. It is gratifying that the study of personality is recognized as being dependent on multiple factors rather than on an isolated theory. However, it is inevitable that studies in personality develop marked defectiveness whenever there exists the lack of sound psychiatric-medical, biological integration and interpretation. With this book, much is lost in verbalization, and in groups of loosely constructed and very impractical tables.

**Education of Primitive People.** By DR. ALBERT D. HELSER. Price \$3.00. 316 pp. Fleming H. Revell Company, New York.

Psychiatrists see in primitive man's thoughts and actions certain parallels with those of the insane and for this reason books such as the one under review have a psychiatric value. This book is particularly interesting. The author, a missionary, shows evidences of comprehensive reading in anthropology, in education and in general sociology, and he has taken continuation courses at Teachers' College, Columbia University, and at London University. His work has been among primitive races of Africa.

The author is beginning his work as a missionary and teacher thoroughly acquainted himself with the language of the natives so that in time he was accepted as "one of them." He hereby had an opportunity to hear native folk tales as they were told to children by the elders. This narration of tales constituted tribal education as the tales bore definite lessons. The object lessons were simple and practical and the writer divides the folk tales into four groups, i. e., those relating to home and social life, to health, to agriculture and live stock, and to crafts. The tales as stated above have definite educational objectives. For example, one short story is told of two boys who while hunting disagreed on how to divide the kill. They took their dispute to the monkey to settle. The monkey tried to divide the portions evenly, but kept clipping from first one, then the other, until little was left. Finally the monkey took all. The lesson for the children was

- a) To meet an unjust person more than half way rather than go to court
- b) To learn that judges live on those who come to them
- c) To see how a fair judgment may be unjustly meted out.
- d) To recognize that taking the smaller piece is not the worst way a matter can be settled.

Many simple tales of this kind assist the children to form judgments and develop character.

The author started his classes on somewhat the same basis and partly by the project method of teaching. He would gather the children about for the classes and propound a question such as, "What makes the baby cry?" Some of the children would say the baby was just mean or that he was bewitched, etc. Then one child might say that the baby cried because he was hungry. The author would seize on this answer and bring out how the mother worked too much and so could not feed the baby properly, etc. Then, would come up a discussion of the use of cow's milk. At first this was ridiculed as useless. Then examples were pointed out where favorable



results were seen. Finally they agreed to ask the parents to come next day and take part in the discussion. Thus, cow's milk came to be used.

Following the same methods, plans were worked out by which the lepers who frequently cared for the babies were no longer allowed to do so. In this way without antagonizing the natives many reforms were introduced. This method of teaching appears so practical and fundamental that the project and discussion method for all children seems desirable. Such a method might be excellent for defective children. The book deals with an interesting phase of education.

BROWN.

**Outline of Clinical Psychoanalysis.** OTTO FENICHEL. Translated by B. D. Lewin and G. Zilboorg. 492 pages. The Psychoanalytic Quarterly Press and W. W. Norton & Company, Inc., New York, 1934.

Within the past few years several books on the practical, everyday application of psychoanalytic principles have appeared. Each has helped to clarify issues which in their more theoretical setting are not easily grasped even by those whose special interests have developed along psychoanalytic lines. Fenichel aspires to bring theory and practice into closer alliance and he does so by considering the principles of psychoanalysis in relation to clinical syndromes. This method of presentation should appeal to clinical psychiatrists, especially to those who would care to include the psychoanalytic viewpoints of Freud with other psychotherapeutic attitudes. Fenichel has at least made a move toward bringing psychoanalysis in association with clinical diagnosis, so that the practitioner may be able to gauge the influence of psychoanalytic conceptions upon the individual syndrome before him.

It is a book, however, for those psychiatrists who have had special psychoanalytic training; to them it should be a valuable asset. It is by no means a primer in psychoanalytic psychiatry and it would, therefore, be of little service to those who are not well informed in the basic theoretical and practical principles of psychoanalysis.

The book shows scholarship. It is heavily and appropriately documented. Moreover, it appears to be backed by good judgment in that Fenichel seems to have reasonably evaluated the contributions of psychoanalysis to clinical (psychogenic) psychiatry.

The translation seems smooth and facile. There is a comprehensive index that makes the book doubly valuable.

L. E. HINSIE.

**The Professional Training of the Hospital Dietitian.** By HELEN CLARKE, Ph. D., Teachers' College, Columbia University. Contributions to Education, No. 602. Cloth. Price \$1.50. Pp. 96. Bureau of Publications, Teachers' College, Columbia University, New York, 1934.

This gives the results of a study of the courses of training provided for hospital dietitians as offered by schools of collegiate rank in the United States and Canada. Part of the information was obtained by the questionnaire method, part by personal correspondence and part by visits to hospitals. There is a list of the colleges giving this instruction, with the subjects and trends of training, compared with the outline of courses approved by the American Dietetic Association. The status of the hospital dietitian and of the dietitian interne is discussed. Obviously a study of this character is of primary interest only to those engaged in or preparing for dietary work or instruction therein, but the chapter on the historical development of hospital dietetics is of interest to the general reader.

LEWIS M. FARRINGTON.





ROBERT M. ELLIOTT, M. D.



## RETIREMENT OF DR. ELLIOTT

Dr. Robert M. Elliott, who had been superintendent of Willard State Hospital for over 30 years, retired from State service on December 31, 1934. Dr. Elliott was born in Penrith, England, March 25, 1863. He attended private schools near his birthplace and later Carlyle Academy and Warwick Road Academy. When 21 years of age he came to New York State. He took up the study of medicine in 1887 at the medical school of Buffalo University and graduated in 1890.

Following graduation, Dr. Elliott entered the New York State hospital service by becoming junior assistant physician at Rochester State Hospital. On July 1, 1891, he was promoted to assistant physician. He remained in this position until November 13, 1895, when he was appointed medical superintendent in charge of the Brooklyn division of the Long Island State Hospital at Flatbush, Brooklyn. At that time Long Island State Hospital was composed of two divisions, the other being the Kings Park division. On May 1, 1900, each division was established as a separate institution and Dr. Elliott was appointed superintendent of the Brooklyn State Hospital by its Board of Managers, May 1, 1900. After serving in such position for four years, he was transferred on June 1, 1904, to the superintendency of the Willard State Hospital.

During Dr. Elliott's administration of Willard State Hospital the institution has grown in size and efficiency and is now one of the best equipped institutions of its kind in the State. A new reception hospital completed in the spring of 1931 was named Elliott Hall in honor of the superintendent. Other recent additions to the hospital include an infirmary, homes for employees and staff houses.

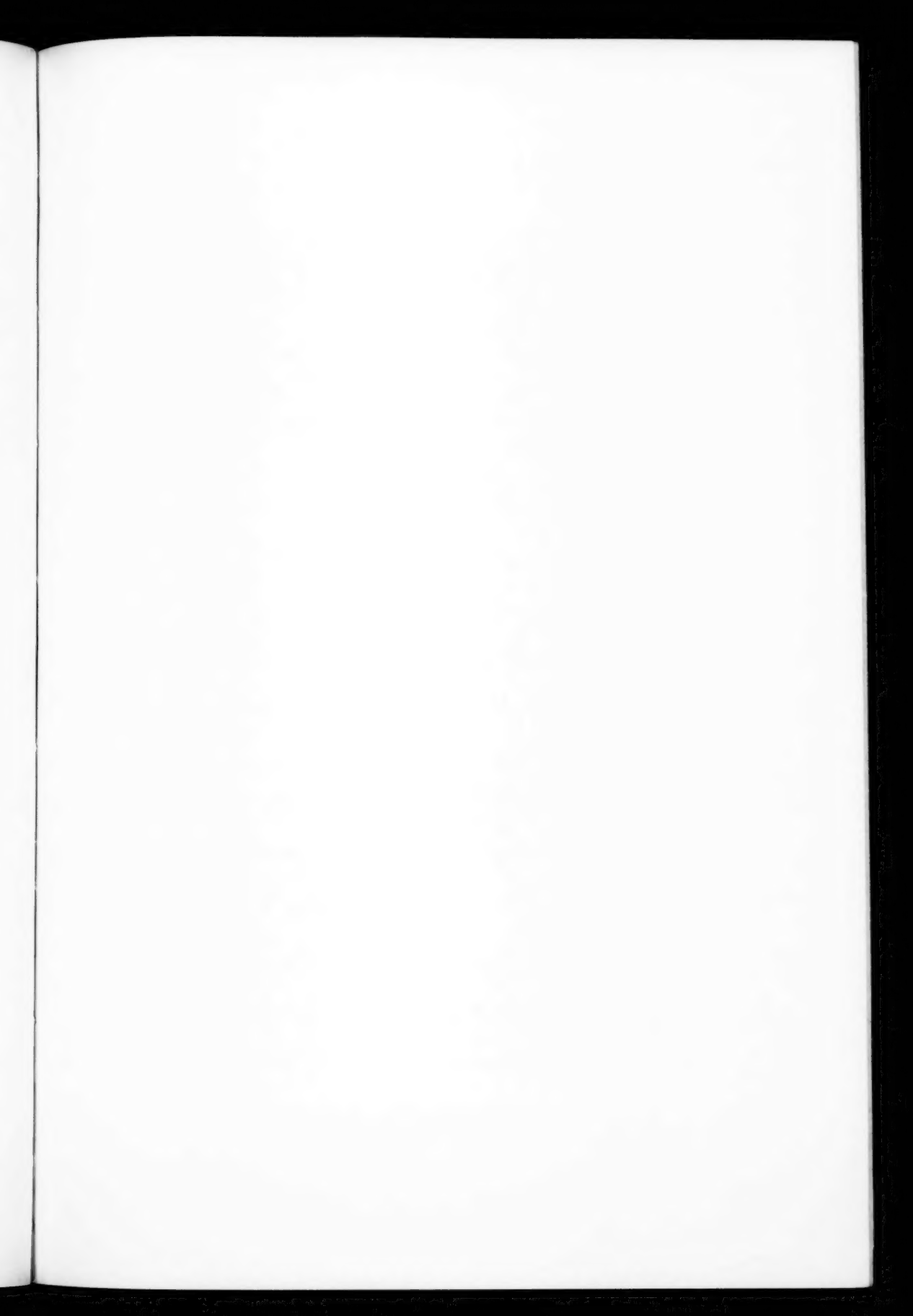
Dr. Elliott has taken up his residence on North Main Street, Canandaigua, in a spacious residence which he purchased some years ago and remodeled to insure his comfort after retirement.

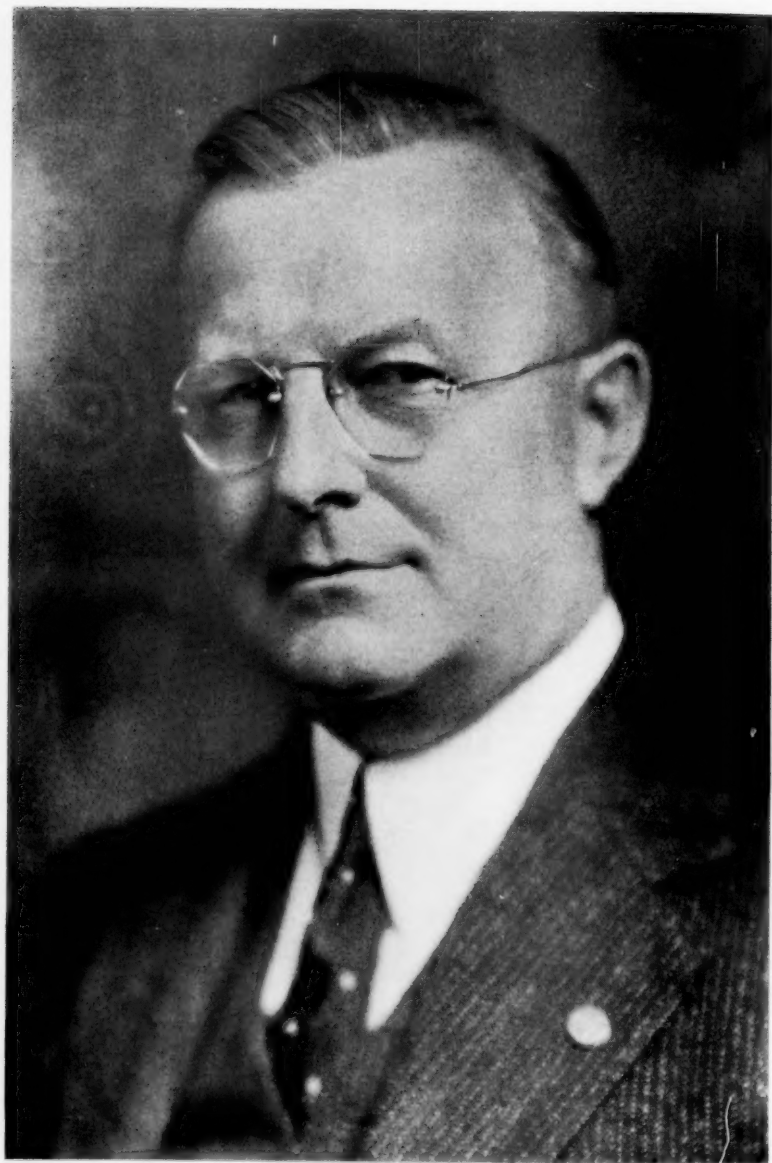
During his life at Willard, Dr. Elliott maintained an active interest in medical affairs both within and without the hospital. He was president of the Lake Keuka Medical and Surgical Association in 1910, and a vice-president of the Medical Society of the State of New York in 1911. He was appointed clinical lecturer on mental disease at the Long Island Medical College in 1902, and held this appointment for 17 years. For many years he has taken an active interest in the Willard Committee on Mental Hygiene and After-Care which was established by the State Charities Aid Association in 1906 and is still an effective organization.



The following appreciative note relative to Dr. Elliott's retirement is from the pen of Dr. Frederick W. Parsons, State Commissioner of Mental Hygiene:

"It is with mixed emotions that the Department marks the termination of Dr. Elliott's notable service. His retirement is regretted but the well-earned leisure will be usefully and pleasantly employed. Dr. Elliott's personal qualifications set him apart. He was a kind physician, a capable administrator, a gracious host and a fine English gentleman. All his friends delight in the strength and vigor shown by his capacity for work and his youthful enthusiasm. That he may have them all for many years is the hope of all his associates."





HARRY J. WORTHING, M. D.



## **DR. WORTHING BECOMES SUPERINTENDENT OF WILLARD STATE HOSPITAL**

Dr. Harry J. Worthing, first assistant physician of St. Lawrence State Hospital, was appointed by Commissioner Parsons on January 1, 1935, superintendent of Willard State Hospital to succeed Dr. Robert M. Elliott, retired.

Dr. Worthing was born at Norwood, N. Y., April 14, 1888. He attended the public schools of his native village and graduated from its high school in 1907. Pursuing his studies in Syracuse University, he graduated from its college of medicine in 1913. He took a post-graduate course in psychiatry at the Psychiatric Institute in 1920.

Dr. Worthing entered the New York hospital service by becoming an interne in St. Lawrence State Hospital, June 12, 1913. He was promoted to assistant physician on May 25, 1915, and to senior assistant physician, March 11, 1919. He was appointed first assistant physician at Harlem Valley State Hospital, January 1, 1925. After serving six months in this position he was transferred to the position of director of clinical psychiatry at St. Lawrence State Hospital. He became first assistant physician at this hospital, July 1, 1930. He was appointed acting deputy medical inspector of the Department of Mental Hygiene May 1, 1933, and served one year in this position. He resumed the duties of first assistant physician at St. Lawrence State Hospital in May, 1934.

Important papers written by Dr. Worthing include "Anatomy and Physiology of the Vegetative Nervous System" and "Diathermy in the Treatment of General Paralysis." For the past three years he has been actively interested in the treatment of pulmonary tuberculosis by diathermy.

Dr. Worthing was commissioned first lieutenant of the Medical Corps of the New York National Guard in February, 1916, and served on the Mexican border in the Twenty-third Infantry Regiment from July 16, 1916, until February, 1917. At the beginning of the World War he was again called to military service and joined the First New York Infantry. He served in the One Hundred and Sixth Infantry at Camp Wadsworth, S. C., was commissioned captain in the Medical Corps in December, 1917, and was made division psychiatrist of the Twenty-seventh Division, accompanying that organization overseas. In France he was attached to the Third Regular Army Division as division psychiatrist and saw active service during the Somme offensive and the fighting at Ypres-Lys and the Meuse-Argonne. Following the armistice, he was assigned to duty at Base Hospital 214 at Saveny, France. He returned to the United States in

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March, 1919, and was discharged from the service, April 2, 1919. Following discharge he was commissioned major in the Medical Corps of the New York National Guard.

Dr. Worthing is a member of the St. Lawrence State Hospital Medical Society, the St. Lawrence County Medical Society, the New York State Medical Society, and the American Psychiatric Association.

He was married to Margaret Gage Fletcher of Norwood, N. Y., June 23, 1917.

## NOTES

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—Andrew D. Morgan, who was a member of the New York State Hospital Commission from March 27, 1914, to April 21, 1921, died December 15, 1934, after a prolonged illness.

—Dr. Edward D. Fisher, former professor of nervous and mental diseases in the New York University Medical College, and one-time president of the American Neurological Association, died in New York City, November 23, 1934, at the age of 78.

—The twelfth annual meeting of the American Orthopsychiatric Association will be held at the Pennsylvania Hotel in New York City, February 21-23, 1935. The president of the association is Dr. George S. Stevenson and the secretary is Miss Mary Augusta Clark; both have offices at 50 West 50th Street, New York City.

—The National Committee for Mental Hygiene has launched a nationwide study to determine what can be done to improve the calibre and fitness of public school teachers from the standpoint of personality and mental health. The inquiry will be under the direction of Harold L. Holbrook, a prominent educator, and will be financed for a period of one year by the Carnegie Corporation.

—Dr. Robert M. Ross, senior assistant physician of Rockland State Hospital, was appointed physician-in-charge of Brigham Hall Hospital, December 1, 1934, to succeed the late Dr. Henry C. Burgess. Dr. Ross is a graduate of the University of Illinois Medical School and has had extensive experience in general and psychiatric hospitals. Dr. Margaret Taylor Ross, assistant at Rockland State Hospital, has been appointed assistant physician at Brigham Hall Hospital.

—"Falkirk in the Ramapos" is the new name of the private institution for mental patients located at Central Valley, New York, and formerly known as Dr. MacDonald's House. When the institution was originally established in 1889 by Dr. James F. Ferguson, he gave it the name of "Falkirk in the Ramapos," in 1906 when Dr. Carlos F. McDonald became the head of the institution, the name was changed to Dr. MacDonald's House. When Dr. Charles W. Pilgrim purchased the institution from Dr. MacDonald, he continued to operate it under the same name. Dr. Theodore W. Neumann, son-in-law of Dr. Pilgrim, is now physician in charge of the sanitarium.



—Dr. Frederick W. Parsons was reappointed commissioner of mental hygiene by Governor Herbert H. Lehman on January 1, 1935. Commissioner Parsons was originally appointed State hospital commissioner, July 1, 1926. He became the first commissioner of mental hygiene on January 1, 1927, when the new State Department of Mental Hygiene was organized. He was reappointed by Governor Roosevelt, January 7, 1929, and again on January 7, 1931. He was first reappointed by Governor Lehman, January 5, 1933.

—Dr. Lewis Stephen Pilcher, editor of the *Annals of Surgery*, died December 24, 1934, at 89 years of age. Dr. Pilcher received his medical degree from the University of Michigan in 1866. He became editor of the *Annals of Surgery* in 1884, holding the post for the ensuing 50 years. From 1877 to 1884 he was associated with the *Annals of Anatomy and Surgery*; he was thus the dean of medical editors in the United States. The *Annals of Surgery* will continue to appear, with an editorial board of 12 members. Dr. James Taft Pilcher will be managing editor.

—Worcester State Hospital at Worcester, Mass., announces six psychiatric internships of 12 months to begin July 1, 1935. The internes chosen for these positions will be assigned to a rotating service on the several types of wards of the hospital, and will be given organized instruction in psychiatry and related subjects. Unmarried male graduates of Class A medical schools who have completed accredited internships in medicine are eligible for these positions. Application should be made to the director of clinical psychiatry of the hospital.

—Dr. Sydney Kuh, who had been chief of the staff of the Cook County Psychopathic Hospital during the past 10 years, died of heart disease at his home in Chicago, December 27, 1934, at the age of 68.

Dr. Kuh was educated at the Universities of Chicago, Heidelberg, Vienna, Paris and London. For several years he was professor of neurology and psychiatry at the Chicago Polyclinic and was clinical professor of nervous diseases at Rush Medical College. He was serving in the latter position at the time of his death.

—Dr. Percy B. Battey, who had been superintendent of the State Reformatory for Women and the State Prison at Bedford Hills, New York, since July 1, 1932, died of heart disease at his residence on the institution grounds January 3, 1935. He was 45 years of age.

Before his appointment at Bedford Hills, Dr. Battey had been surgeon of the Connecticut State Prison at Wethersfield, and later psychiatrist of

the State Institution for Defective Delinquents at Napanoch, New York. He was a member of the American Psychiatric Association and of the American Orthopsychiatric Association.

—The fifteenth annual meeting of the Association for Research in Nervous and Mental Disease was held in New York City on December 27-28, 1934. The general subject was "Sensation: Its Mechanism and Disturbances."

The following officers were elected for the ensuing year:

President: Edwin G. Zabriskie, M. D., New York City.

First vice-president: Charles H. Frazier, M. D., Philadelphia.

Second vice-president: Thomas K. Davis, M. D., New York City.

Secretary-treasurer: Angus M. Frantz, M. D., New York City.

Assistant secretary: Clarence C. Hare, M. D., New York City.

The topic for the 1936 meeting is "Neoplasms of the Nervous System."

—The Neurological Institute of New York City celebrated the 25th anniversary of its founding on December 20, 1934. The principal speaker at the exercises held at the Institute was Dr. Joseph Collins, the sole survivor of the three original founders of the Institute. A silver tray was presented to Dr. Collins in behalf of the medical staff of the Institute by Dr. Edwin G. Zabriskie, chairman of the medical board. Other speakers were Dr. Bernard Sachs, Dr. Willard C. Rappleye and Dean Sage.

The Neurological Institute is a part of the Columbia-Presbyterian Medical Center and is located alongside the State Psychiatric Institute and Hospital. The history of the Institute during the past 25 years is replete with achievement. It now stands without a peer in America.

—On November 24, 1934, the National Committee for Mental Hygiene celebrated its twenty-fifth anniversary. Public meetings in connection with the occasion provided an opportunity to review the accomplishments of the committee, and to outline a program for the future. Among the principal speakers at the meetings were: Arthur H. Ruggles, M. D., Clarence M. Hincks, M. D., and Clifford W. Beers, president, general director, and secretary, respectively, of the National Committee for Mental Hygiene. Addresses were also made by Professor Adolf Meyer of Johns Hopkins University, President James R. Angell of Yale University, Dr. James Gould Schurman, former president of Cornell University and Professor M. J. Rosenau of the Harvard School of Public Health. The survey of the past 25 years showed marked progress in provisions for the mentally ill and the mentally defective, as a result of numerous investigations by the National Committee;

a new approach to the treatment of the criminal; the growth of the child guidance movement; and the stimulation of professional and public interest in mental hygiene. As part of the future program, Dr. Hincks announced the decision of the Scottish Rite Masons of the Northern Jurisdiction of the United States to finance a study into the possibility of research in dementia præcox.